

KV-D2513E

RM-689

SERVICE MANUAL

Spanish Model

Chassis No. SCC-C99C-A



AE-1A CHASSIS

Note: The service manual for RM-689 has been issued separately.

MODELS OF THE SAME SERIES

KV-D2511D/E	KV-D2511A
KV-D2913E	
KV-E2913E	

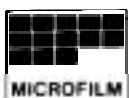
SPECIFICATION

Television system	B/G/H
Color system	PAL SECAM. NTSC 3.58. NTSC 4.43 (selected automatically)
Channel coverage	See >> RECEIVABLE CHANNELS AND CHANNEL DISPLAYS <<
Picture tube	Trinitron tube Approx. 63.5cm (25 inches) (Approx. 59 cm picture measured diagonally) 110-degree deflection
Inputs	<ul style="list-style-type: none"> 1 21-pin connector CENELEC standard including RGB input 2 21-pin connector including S video input 3 4-pin DIN S video input connector Y 1 pin - 0.5mm 75 ohm C 0.3Vp-p 75 ohm Audio input lacks: phono jack
outputs	21-pin connector CENELEC standard Headphones jack stereo minijack External speaker terminals 2-pin DIN Audio output lacks phono jack (output dependent upon TV settings)
Sound output	30 W + 30 W (music power)
Power consumption	110 W h
Dimensions not incl. speakers	Approx. 575 x 493 x 468 mm (w/h/d)
Dimensions incl. speakers	Approx. 718 x 493 x 468 mm
Weight not incl. speakers	Approx. 35.8 kg
Weight incl. speakers	Approx. 38.8 kg
Supplied accessories	RM-689 Remote Commander (1) IEC designation R 6 batteries (2) Detachable speakers (1 pair) Speaker cord (2)

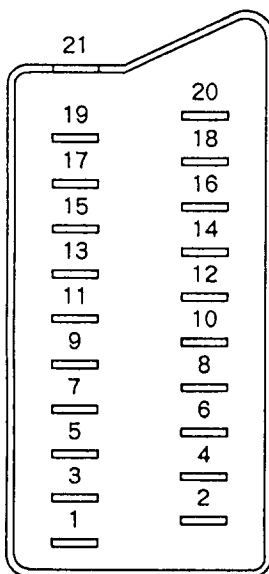
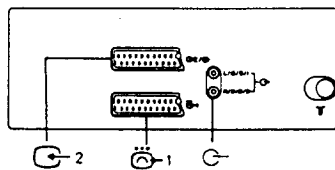
Design and specifications are subject to change without notice

TRINITRON® COLOUR TV

SONY®



21 pin connector (Ⓐ-1, Ⓒ-2)



Pin No	1	2	Signal	Signal level
1	○	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
2	○	○	Audio input B (right)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
3	○	○	Audio output A (left)	Standard level: 0.5Vrms Output impedance: Less than 1kohm*
4	○	○	Ground (audio)	
5	○	○	Ground (blue)	
6	○	○	Audio input A (left)	Standard level: 0.5Vrms Input impedance: More than 10kohms*
7	○	●	Blue input	0.7V±3dB, 75ohms, positive
8	○	○	Function select (AV control)	High state (9.5-12 V): Part mode Low state (0-2 V): TV mode Input impedance: More than 10kohms Input capacitance: Less than 2 nF
9	○	○	Ground (green)	
10	○	○	Open	
11	○	●	Green	Green signal: 0.7V±3dB, 75ohms, positive
12	○	○	Open	
13	○	○	Ground (red)	
14	○	○	Ground (blanking)	
15	○	-	Red input	0.7V±3dB, 75ohms, positive
	-	○	(S signal) chroma input	0.3V±3dB, 75ohms, positive
16	○	●	Blanking input (Ys signal)	High state (1-3 V) Low state (0-0.4 V) Input impedance: 75ohms
17	○	○	Ground (video output)	
18	○	○	Ground (video input)	
19	○	○	Video output	1V±3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
20	○	-	Video input	1 V±3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
	-	○	Video Input/Y (S signal)	1 V±3dB, 75ohms, positive Sync: 0.3V (-3, +10dB)
21	○	○	Common ground (plug, shield)	

○ connected

● unconnected (open)

* at 20 Hz-20 kHz

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

NICAM Reception

Reception of NICAM broadcast is possible if the NICAM adaptor (available at your Sony dealer) is installed in the TV.

When the NICAM broadcast is being received, indicators illuminate according to the sound being heard.

Select the sound you want to hear by pressing the A/B bilingual button. Each time the A/B bilingual button is pressed, the sound will change as indicated with arrows in the following chart.

○ means that the indicator lights up.

× means that the indicator does not light up.

The NICAM sound being broadcast	The sound you hear (Select with the A/B bilingual button.)	Indicators		
		A	B	⊗* (NICAM)
Stereo	Stereo ←	○	○	○
	↓ Regular	×	×	○
A+B (Bilingual)	A ←	○	×	○
	↓ B	×	○	○
	↓ Regular	×	×	○
A	A ←	○	×	○
	↓ Regular	×	×	○
Regular only	Regular	×	×	×

* When the NICAM adaptor is installed, the ⊗ space sound indicator will function as the NICAM indicator (the space sound function will not be affected). When the NICAM broadcast is being received, the NICAM indicator lights up even when the regular sound has been selected.

When you turn on the TV, what sound will be heard? When the Regular sound and the NICAM sound are the same, the NICAM sound will be heard. When the Regular sound and the NICAM sound are different, the Regular sound will be heard.

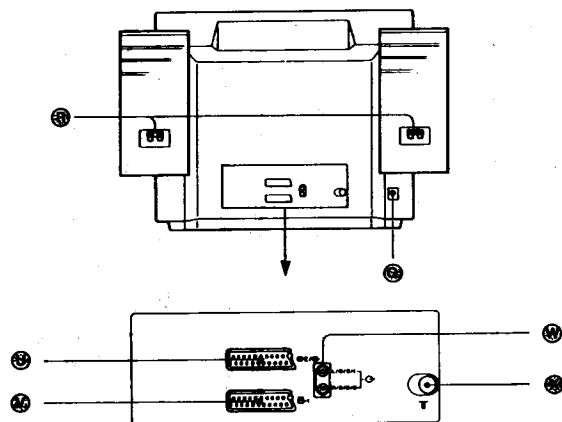
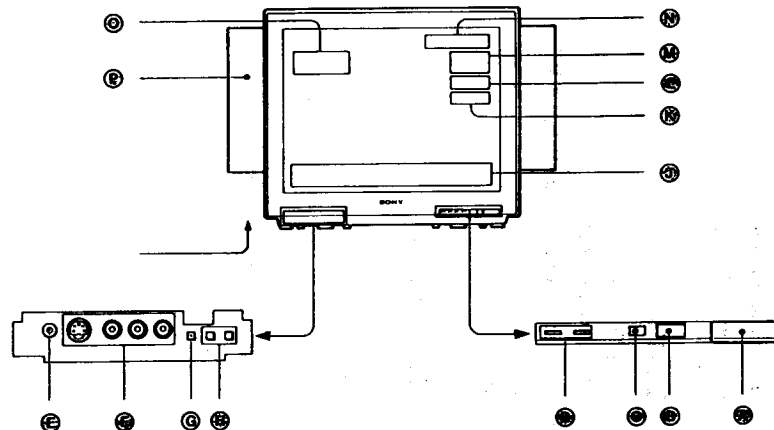
Note

The West German stereo programs can be received as explained in the supplied Operating Instructions.

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SECTION 1 GENERAL

1-1. FUNCTION OF CONTROLS



ON THE SET

(A) Power Switch

Use it to switch the set on and off. When you switch the set on, the programme number of the station tuned in will be indicated in the on-screen display (N) for some seconds. In case of short breaks of operation, you can switch the set on and off using the Remote Commander (See «CONTROLS ON THE REMOTE COMMANDER»).

(B) Remote control detector

(See «CONTROLS ON THE REMOTE COMMANDER»).

(C) Standby/Response Indicator

This indicator lights up when the TV set is in standby mode and it flashes each time the set receives signals from the Remote Commander.

(D) Stereo A/B indicators

During bilingual programmes one of the two indicators lights up, depending upon the selected channel A or B. When stereo programmes are broadcast both indicators light up. (See «CONTROLS ON THE REMOTE COMMANDER»).

Jacks and control panel

The jacks and the control panel are situated behind a cover. Please press the arrow marking on the cover to open it.

(E) Headphones jack (stereo minijack)

Connect only stereo headphones.

(F) Input jacks

(Y/C input) connector (4-pin) (3)
Video input jack (phono jack) (3) (yellow)
Audio input jacks (phono jacks) L/G/S/I and R/D/D/D (red and white).

(G) Mode select button

Use this button to select either the channel select mode, volume adjustment (Δ) or the (3) input mode.

(H) Adjustment buttons +/–

Select at first the item to be adjusted using the Mode select button (G): P (channel select mode), Δ (volume) or (3) (input mode), then adjust the item by pressing the + or – button.

You can also use these buttons to reset the picture and sound adjustments to the factory-set levels. For this purpose press both buttons simultaneously.

On-screen display

When you press button (2) on the Remote Commander, the following information will be indicated on the screen:

(J) Picture and sound adjustment items:

(1) contrast, (2) colour, (3) brightness, (4) hue (only for NTSC), (5) sharpness, (6) bass, (7) treble or (8) balance and the respective levels; as well as (9) mute, (10) reset, (11) space sound, (12) loudness and (13) NICAM indications, when the respective buttons are pressed.

When you press button (10) on the Remote Commander, the following information will be indicated on the screen:

(K) TV-System: I

(L) Channel number

(M) Programme number or input mode;

(1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13);

(N) Indication of the station name

(O) AV output indication; (1), (2), (3) or TV (3) (see «CONTROLS ON THE REMOTE COMMANDER»).

(P) Speakers

See «HOW TO ATTACH THE SPEAKERS».

Connectors on the rear

(I) Terminals for the right and left speakers

(J) Terminals on the speakers

(K) Euro-AV-connector 21-pin (3)/(4)

For connecting a VTR, 8 mm video camera recorder, a video disc player or in general devices with an S-Video-output.

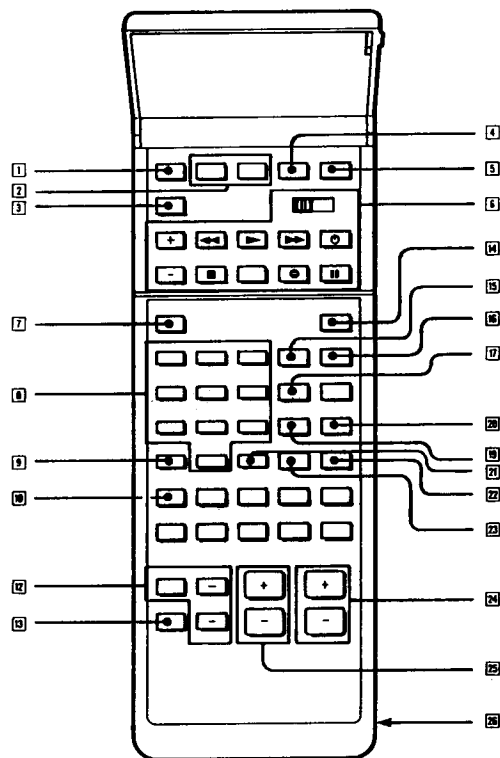
(L) Euro-AV-connector 21-pin (5)-1

For connecting a VTR, a video disc player, a computer ecc.,

(M) Audio-output-jacks (phono jacks) (6)

For connecting audio equipment, e.g. an amplifier, so that the sound will be output at the audio equipment. In this case the volume is adjustable on the TV set.

(N) Aerial terminal 17



ON THE REMOTE COMMANDER

On the set there is a Remote Control detector (B), which receives the signals of the Remote Commander.

- 1 **Preset-button** Used for selecting the Preset mode. See »TO PRESET CHANNELS«;
- 2 **Tuning +/- buttons**
 - a) Preset mode: Used for tuning in stations in the Automatic Station Search: See »TO PRESET CHANNELS«;
 - b) TV-mode: Used for fine-tuning a station. See »ADDITIONAL FUNCTIONS«;
- 3 **C.. button (Clear)** Used for clearing programme positions, so that the position will be skipped when the PROGR +/- buttons 24 are pressed. See »TO PRESET CHANNELS«.

- 4 **Store button:** Used for storing channels. See »TO PRESET CHANNELS«;
- 5 **TV-system-select-button** This button has no function;
- 6 **Video selector and video operation buttons** Used for operating Sony video equipment. For details see »CONNECTING OTHER EQUIPMENT«;
- 7 **Mute button** By pressing this button the sound of the set will be switched off and by pressing it once more the sound will be restored.
- 8 **Number buttons**
 - a) Used to select programme positions or to input channel numbers (in the preset mode).
 - b) If the set is in the standby mode, press one of the number buttons to switch it on.
 - c) After pressing the Output select button 17 the buttons 1-3 can be used to select the different Output connectors.
- 9 **-/- Button** In case of two digit numbers, press first this button and then the two respective number buttons 8.
- 10 **Button for On-screen display** By pressing this button information about the station tuned-in will be indicated on the screen. The indications will disappear after some seconds with the exception of the programme number, which will stay on the screen until the button is pressed once again.
- 12 **+/- Buttons for picture and sound adjustments**
 - a) **TV-mode:** The picture and sound adjustments are stored as standard values. You have, however, the possibility to change them to your individual liking. Press the button repeatedly until the required item is indicated in the on-screen display: contrast, colour, brightness, hue (only for NTSC colour system), sharpness, bass, treble or balance. You can adjust the settings by pressing the + or - button.
 - b) **Preset-mode:** Use these buttons to name a station. See »TO PRESET CHANNELS«;
- 13 **Reset-button** By pressing this button the picture and sound adjustments are reset to the factory-set levels.
- 14 **Standby-button** Press this button to switch the set into standby-mode. You can switch it on again by pressing the TV-button 16 or one of the number buttons 8. To return to the teletext mode, press the button 18. There will be a slight delay before the picture is restored.

Note

Use the Standby-button 14 only when switching the set off for a short period of time. If the set will not be used for a longer span of time, switch it off by using the Power switch A.

- 15 **Input-Select-Button** Press this button to select the audio- or video-signals input at the various input connectors. With each pressing of the button a different connector is selected. The following indications will appear sequentially:
 1 → 2 → 3 → TV-mode
- 16 **TV-Button** When pressing this button the set returns from standby, video input- or teletext mode to the TV-mode.
- 17 **Output-Select-Button** Press this button to select the audio- or video signals to be output at the connector. First press this button, then select the desired signal source using the number buttons 8 (either 1, 2 or 3) or the TV-button 16 (if the signals which are on the screen are to be output).
- 18 **Loudness button** By pressing this button the high and low tones will be emphasized. Press the button again to restore the normal sound. The indications on the screen will be or .
- 20 **A/B button** To select the channel of bilingual programmes. Usually the synchronized version is broadcast on channel A and the original sound is broadcast on channel B. During NICAM broadcast, use to select the sound, which you would like to hear (See »ADDITIONAL FUNCTIONS«). In the video input mode (Euro-AV-connectors) this possibility of selecting channels also exists.
- 21 **C (Channel select) button** Use this button for direct channel tuning in the TV-mode. See »ADDITIONAL FUNCTIONS«.
- 22 **This button has no function on this set.**
- 23 **Space sound button** Press this button to obtain special acoustic effects. Press it again to restore the normal sound. The indications on the screen will be or .
- 24 **PROGR +/- buttons** TV-mode: Use these buttons to scan the available programmes up- or downwards. Preset mode: Use these buttons to scan the available channels up or downwards.
- 25 **+/- buttons for adjusting the volume**
- 26 **Battery compartment (on the rear)**

1-2. TO PRESET CHANNELS

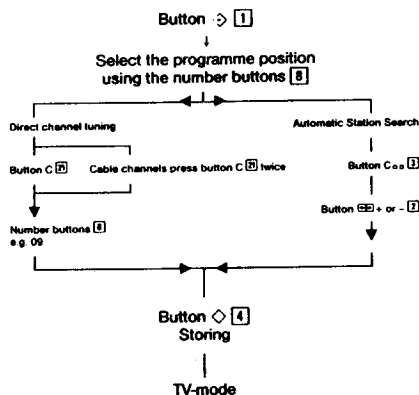
Use the buttons on the Remote Commander for presetting. In total there are 60 programme positions at your disposal for storing channels. There are two different ways of tuning in channels:

1. Direct Channel Tuning

You know the channel number of a station and can input it directly.

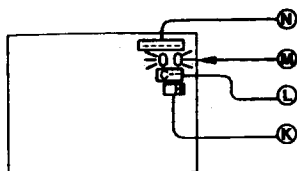
2. Automatic Station Search

The set searches automatically for stations (including cable channels).

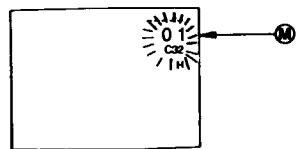


1. Direct Channel Tuning

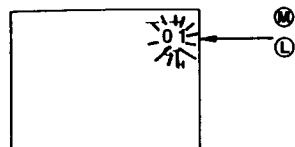
1. Press the Preset button \rightarrow 1. You are now in the preset mode of the set. The programme number in the on-screen display M starts blinking.



2. With the buttons PROG +/− 24 or the number buttons 8 you can select the programme position. In case of two-digit numbers, press first the button −/− 9 and then the two number buttons.

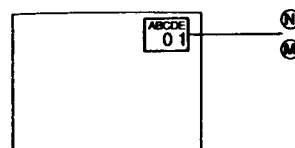


3. Press button C 21. The indication -C- and the channel number start blinking in the display L . Select the channel number with two digits (e.g. 04) using the number buttons 8.



If you want to select a cable channel press button C 21 twice. In this case the indication -S- will appear in the display L . Select the channel number as described above.

4. Press the button < 4 in order to store the channel and to return to the TV-mode.



If you want to store further channels, repeat the steps 1 to 4.

2. Automatic Station Search

1. Press button \rightarrow 1. You are now in the preset mode of the set. The programme number in the on-screen display M starts blinking.

2. With the PROG +/− 24 or the number buttons 8 you can select the programme position. In case of two-digit numbers, press first button −/− 9 and then the two number buttons.

3. If there is already a stored station on the selected programme position, press button C.. 3.

4. Press one of the tuning buttons \rightleftharpoons +/− 2 to start the station search. The search will be interrupted as soon as a station is tuned in. Press the tuning buttons repeatedly until you find the desired station.

5. If you have found the desired station, press button < 4. Now the selected station is stored and you are back in the TV-mode.

6. If you want to store further stations, repeat the steps 1-5.

Skipping of unused programme positions

Using button C.. 3 you have the possibility to have unused programme positions (e.g. without a stored station) skipped, when pressing the buttons PROG +/− 24 on the Remote Commander.

1. Press button \rightarrow 1. You are now in the preset mode of the set.

2. Use the buttons PROG +/− 24 to select the programme position, which you want to have skipped.

3. Press button C.. 3.

4. Press button < 4 to store the cleared programme position and to return to the TV-mode.

The skipped programme positions still appear when you press the number buttons 8 on the Remote commander.

If you want to name a station

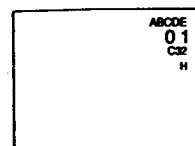
After presetting the stations you have the possibility to name them. The selected name will appear in the on-screen display N .

1. Press the preset button \rightarrow 1.

2. Press the button \rightleftharpoons 12. The first column of the station name starts blinking. Press either button + or − 2 and select the desired character (number or letter, 0-9, A-Z, - for a blank column).

3. Press button \rightleftharpoons 12 again. Now the second column starts blinking and you can select the second character. In this way five characters can be selected.

4. Press button < 4 to store the station name.



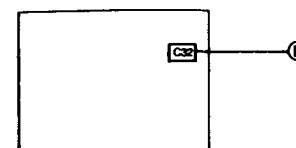
ADDITIONAL FUNCTIONS

Direct Channel Tuning in the TV-mode

You have the possibility to tune in channels directly when the set is in the TV-mode without storing these channels. Example: You tune in channel number 32. If you switch the set off or change the programme position, this channel will be cancelled.

1. Press the button C 21. In the display N the indication -C- will appear. For cable channels press the button C 21 twice. On the screen -S- will be displayed.

2. Select the channel number with two digits using the number buttons 8 (e.g. for channel 4 press first 0, then 4). The indication on the screen will disappear within some seconds.



Manual Fine Tuning

If the reception of a channel is not satisfactory, you have the possibility to deactivate the Automatic Fine Tuning, which is usually in operation during presetting in order to tune in the best possible picture. Press one of the tuning buttons \rightleftharpoons +/− 2 to fine-tune a channel. The Automatic Fine Tuning will be restored when the respective programme position is pressed once again.

Notes

- If you press the preset button \rightarrow 1 instead of button < 4 the set will return to the TV-mode without storing the channels.
- If you press a wrong programme or a channel number, an -x- will be displayed on the screen.
- When pressing two number buttons, the second number button should be pressed within 5 seconds after the first one, otherwise the operation will be cancelled.

1-3. VIEWING TELETEXT

To view the teletext service, use the Remote Commander. The buttons for teletext operation are indicated in green.

Operation

- 1 Select the TV channel for the desired teletext service. When the signal is weak, teletext errors often occur.
- 2 Press (TEXT/MIX) to display the teletext service.
- 3 Key in the three digits of the desired page using the number buttons. If an error is made, complete the three-digit sequence by keying in any digit. Then, re-enter the correct page number. The requested teletext page is displayed.

To request the index page

Press (INDEX).
If the necessary signal is not being broadcast, page 100 is displayed.

To access the next or preceding page

Press (PAGE +) or (PAGE -).

To superimpose the teletext display on the picture

Press twice from the TV mode.
Press again to return to the TEXT display.

To suppress the teletext display so that the TV picture is displayed

Press (TEXT CL).
This button can be operated from both the TEXT and MIX displays.

To prevent a teletext page from being updated/changed
Press (HOLD). The HOLD symbol appears on the screen.
To resume normal teletext reception, press (TEXT/MIX).



To enlarge the teletext display

Press once to enlarge the upper half of the display; press again to enlarge the lower half of the display. And press again to return to the normal display.

To reveal concealed information such as answers to a quiz

Press (REVEAL).
Press again to conceal the answers.

To watch the TV programme while waiting for a requested page to be displayed

- 1 Request the new page.

FASTEXT Operation

FASTEXT Teletext enables you to access pages quickly and conveniently with one key operation.

When a FASTEXT page is broadcast a colour coded menu will appear at the bottom of the screen. Each coloured prompt relates to the coloured keys on the Remote Commander. Pressing on of these will select the page described by the prompt.

To return to the TV mode, press TV on the Remote Commander.

The teletext service can be displayed directly from the standby mode by pressing (TEXT/MIX).

To receive the teletext service of a different TV channel

- 1 Press TV to return to the TV mode.
- 2 Select the desired TV channel.
- 3 Press (TEXT/MIX).

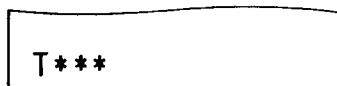
- 2 Press to watch the TV programme. The requested page number and other data appear at the top of the screen. When the requested page has been captured, the page number is displayed in the top left hand corner of the screen.



To view this page, press (TEXT/MIX).

To have a requested page displayed at a pre-determined time

- 1 Request a time coded page (e.g. alarm page).
- 2 Press (TP ON).
"T * * * * " will appear at the bottom of the screen.



- 3 Enter your request time with the number buttons, using four digits. For example, 07 30.



To watch the TV programme until the requested time, press (TEXT CL). At the requested time, the page number will be displayed at the bottom of the screen.

To view this page, press (TEXT/MIX).
To cancel the request, first ensure that the teletext page is displayed, then press (TP OFF).

Selection may also be made by entering the three digit page number in the normal way.

Correct FASTEXT operation relies on the necessary signals being transmitted by the Broadcasting Authorities. It is possible that some Broadcasters will not support this transmission.

If FASTEXT is not transmitted, the decoder will operate as outlined above.

1-4. CONNECTING OTHER EQUIPMENT

To view the input picture

Press the button repeatedly until the desired input signal indication appears on the screen.

1: to view the audio and video signal input through the 1 connector on the rear.

1: to view the RGB signal (i.e. from a computer, etc.) input through the 1 connector.

2: to view the audio and video signal input through the 2/2E connector on the rear.

2: to view the S video signal (from a VTR equipped with an S video output) input through the 2/2E connector.

3: to view the audio and video signal input through the 3 connectors and the audio input jacks (yellow, white and red) on the front.

3: to view the S video signal input through the 3 connectors on the front (4-pin connector and white and red phone jacks).

You can also select the desired input mode using the buttons on the front of the set. Select the mode with the mode select (+ +) button , then press +/- button.

To return to the TV mode, press the TV-button.

To select the signal to be output from the 2/2E connector

Press the button , then 1, 2, 3 or the TV-button while is displayed, so that one of the following indications is displayed:

1 1: The audio and video signal input through the 1 connector is output from the 2/2E connector.

2 2: The audio and video signal input through the 2/2E connector is output from the 2/2E connector.

3 3: The audio and video signal input through the 3 connectors is output from the 2/2E connector.

TV 2: The audio and video signal input through the 1F aerial terminal (i.e. usually the TV signal) is output from the 2/2E connector.

The indication will disappear after a few seconds.

Note

The TV-signal is always output at the EURO-AV connector 1.

To operate a Sony video equipment

The video operation buttons on the Remote Commander can operate the VTRs and video disc players manufactured by Sony.

1. Switch the video selector to the desired position.
VIDEO 1: to operate Sony Betamax VTR and SLV 202 VHS.
VIDEO 2: to operate Sony 8 mm VTR.
VIDEO 3: to operate Sony VHS VTR.
MDP: to operate Sony video disc player including a multi disc player.

2. Press the operation button(s) to start operation.
PROGR +/-: to select the desired programme on the VTR.

: to rewind the tape or to rapidly go back to the desired position on the disc

: to start playback

: to advance the tape or the disc rapidly to the desired position

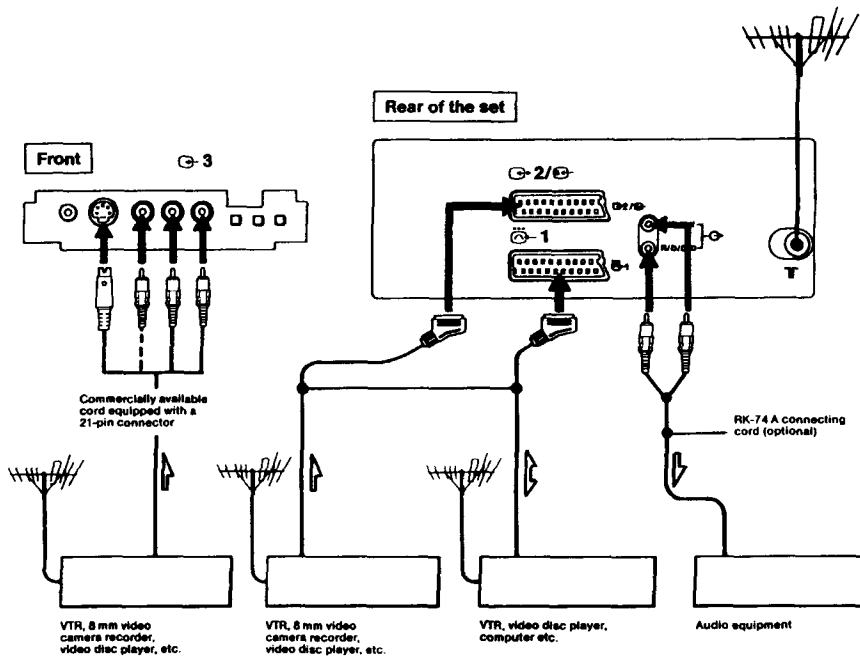
: to stop the tape or the disc, or to release the pause mode

: to start recording on the VTR
Be sure to press this button and the one on the left simultaneously

: to switch the video equipment on and off

: to stop the tape or the disc temporarily (pause)

1.5. HOW TO ATTACH THE SPEAKERS



KV-D 2912 U	
1	Attach the right and left speakers on the sides of the set.
2	Connect the supplied speaker cords to the terminals on the speakers: the white striped cord to the + (red) terminal and the non-striped cord to the - (black) terminal.
3	Connect the left speaker cord to the L/G/S/I terminal and the right speaker cord to the R/D/D/D terminal on the rear of the TV set.

Note

Make sure that the set is turned off when you install the speakers.

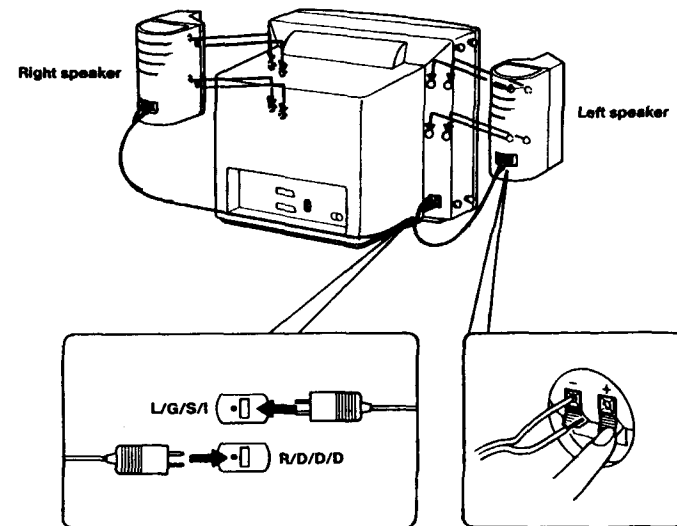
- * Connect the S video output of the VTR, etc. here.
- ** To connect S video connectors (4-pin DIN), use an optional YC-15/YC-15 EV connecting cable.

Notes

- It is also possible to connect a VTR using the 11 terminal. In this case, connect the aerial to the aerial terminal of the VTR.
- Move the VTR away from the TV if the picture or the sound is distorted.
- Computers which have RGB output only can be connected to the 1-1 input connector.

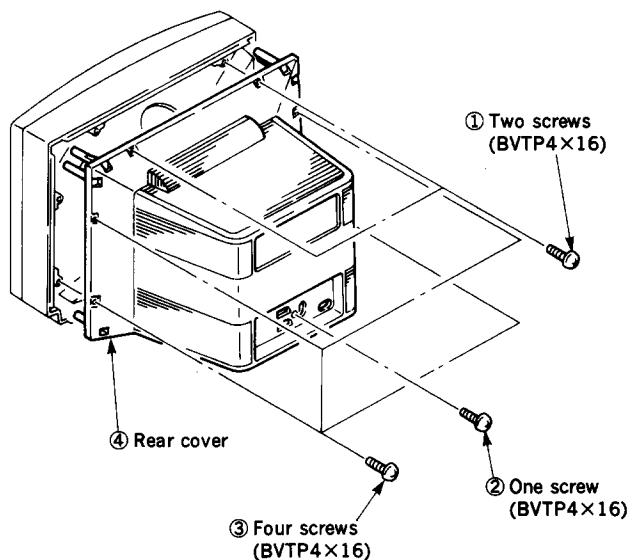
S video input (Y/C input) ②

Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals. Usually these two signals are combined in a VTR and output as one signal, and supplied to a TV. Separation of the Y and C signals prevent them from interfering with one another, thereby improving picture quality (especially in luminance). This set is equipped with two S video input jacks through which these separated signals can be input directly. Connect one of the two S video output jacks on the VTR to the S video input on this set.

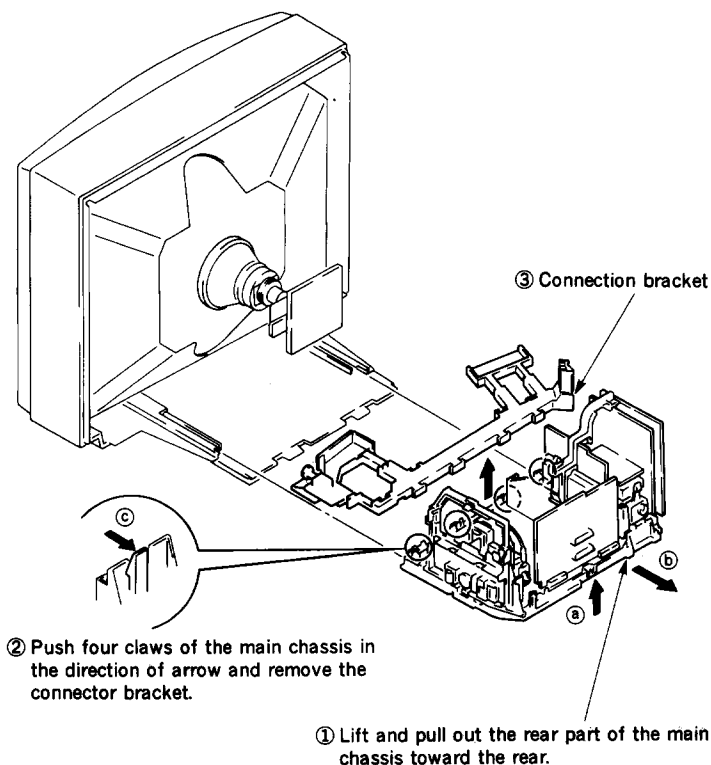


SECTION 2 DISASSEMBLY

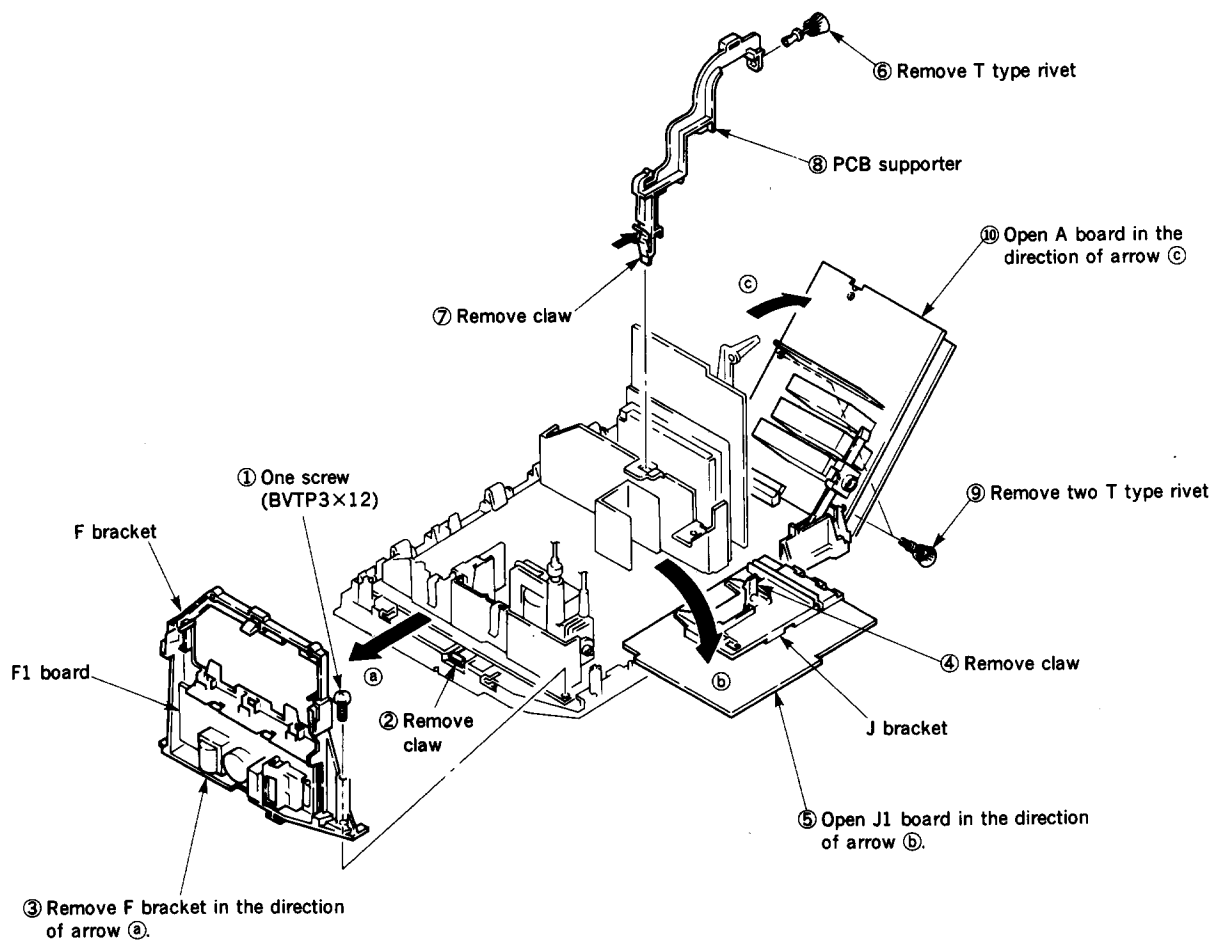
2-1. REAR COVER REMOVAL



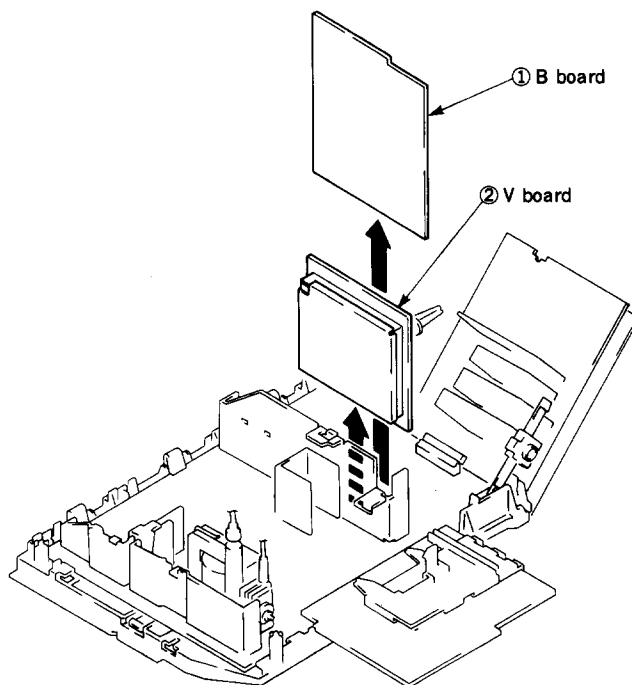
2-2. CHASSIS ASSY REMOVAL



2-3. A, J1 BOARDS OPENING AND F1 BOARD REMOVAL

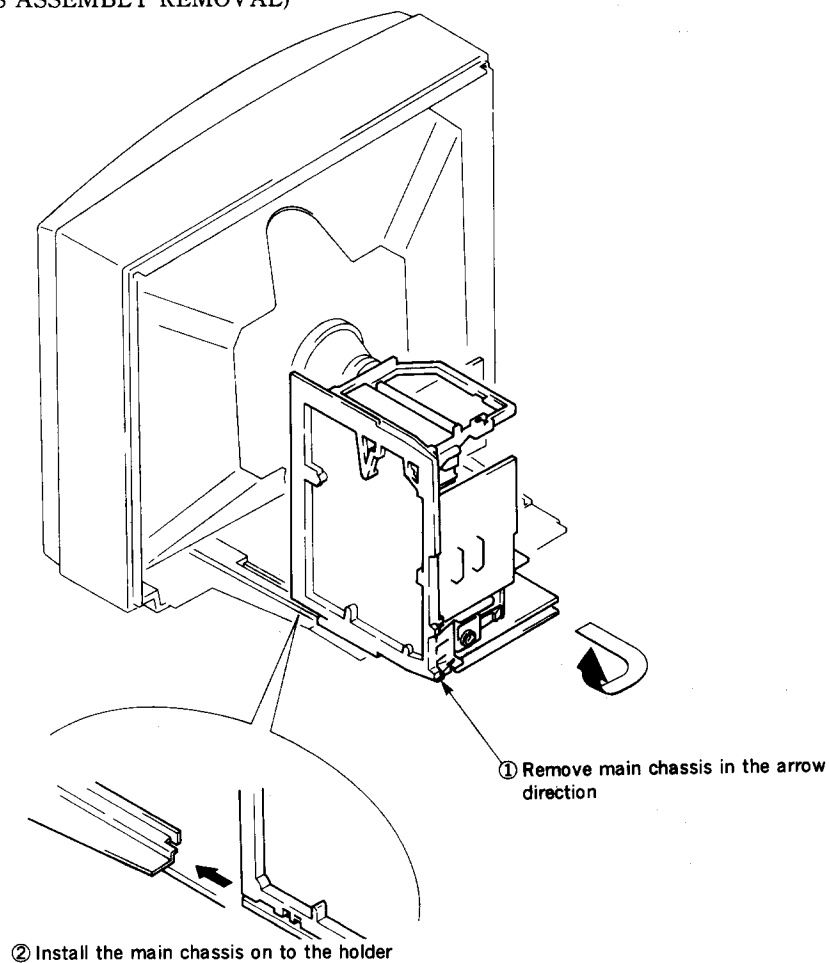


2-4. V AND B BOARDS REMOVAL

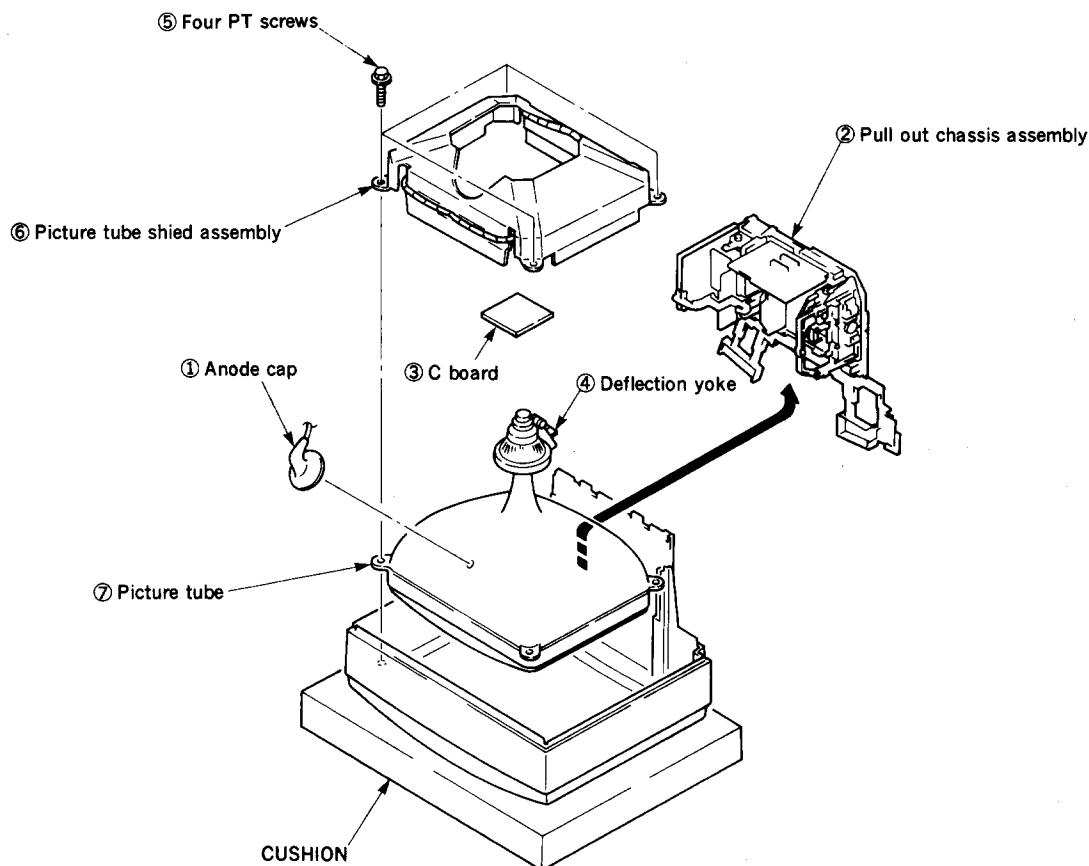


2-5. SERVICE POSITION

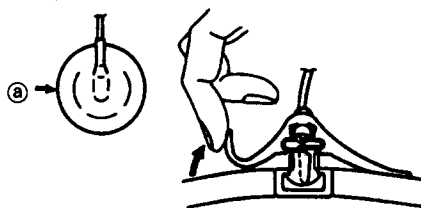
*Remove the connector bracket and then perform the following servicing (refer to 2-2. CHASSIS ASSEMBLY REMOVAL)



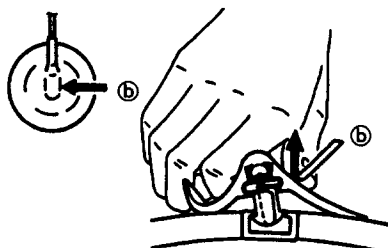
2-6. PICTURE TUBE REMOVAL



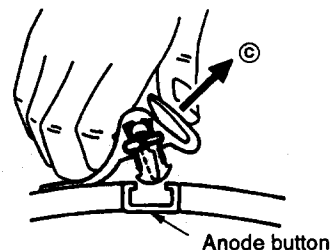
• REMOVAL OF ANODE-CAP
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ①.



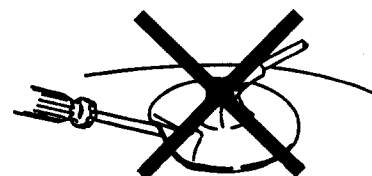
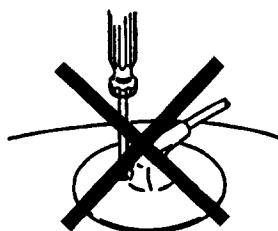
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or hurt the rubber.



SECTION 3

SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

The control and switch below should be set as follows unless otherwise noted:

- CONTRAST control 80%(or Normal by Commander)
- ✧ BRIGHTNESS control 50%

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

Note: Test Equipment Required.

1. Colour Bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter
5. Oscilloscope

Preparation:

- Set the side of the unit with the Picture tube so that it faces east or west in order to reduce the influence of external magnetic force.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

1. Input a raster signal with the pattern generator.
CONTRAST normal
BRIGHTNESS normal
2. Turn the raster signal of the pattern generator to red.
3. Move the deflection yoke backward, and adjust with the purity control so that red is in the centre and blue and green are at the sides, evenly.
(Fig. 3-1 to 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes red. (Fig. 3-1)
5. Switch over the raster signal to blue and green and confirm the condition.
6. When the position of the deflection yoke is determined, tighten it with a deflection yoke mounting screw.
7. When landing at the corners is not right, adjust by using the magnet. (Fig. 3-4)

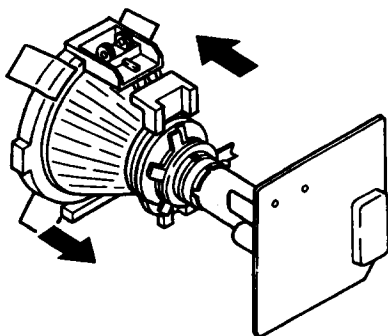


Fig. 3-1

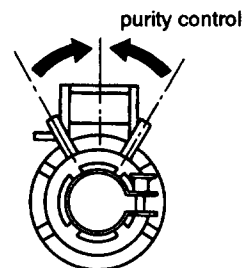


Fig. 3-2

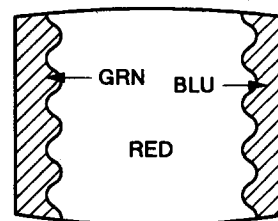


Fig. 3-3

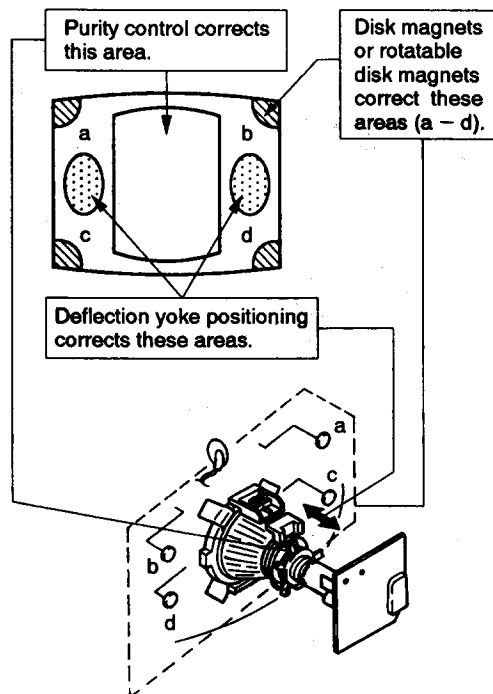


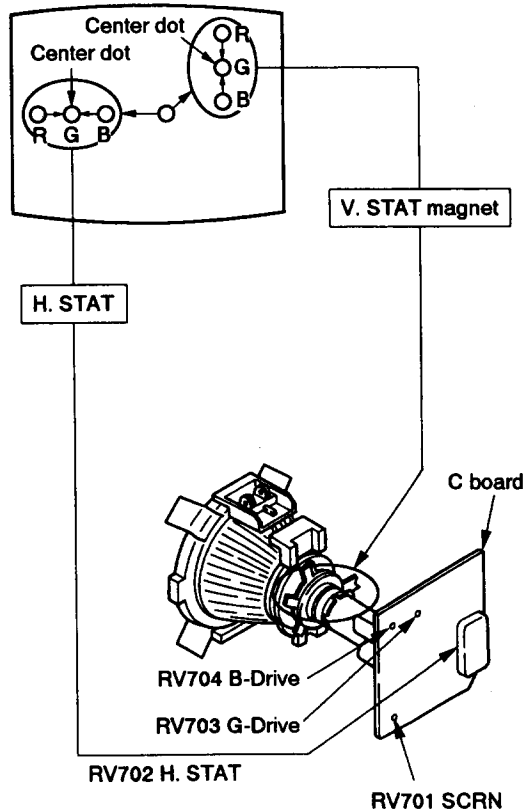
Fig. 3-4

3-2. CONVERGENCE

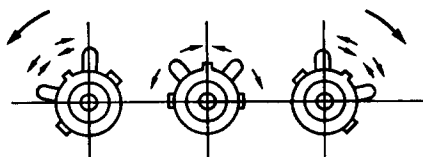
Preparation:

- Before starting, perform FOCUS, H. SIZE and V. SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in the dot pattern.

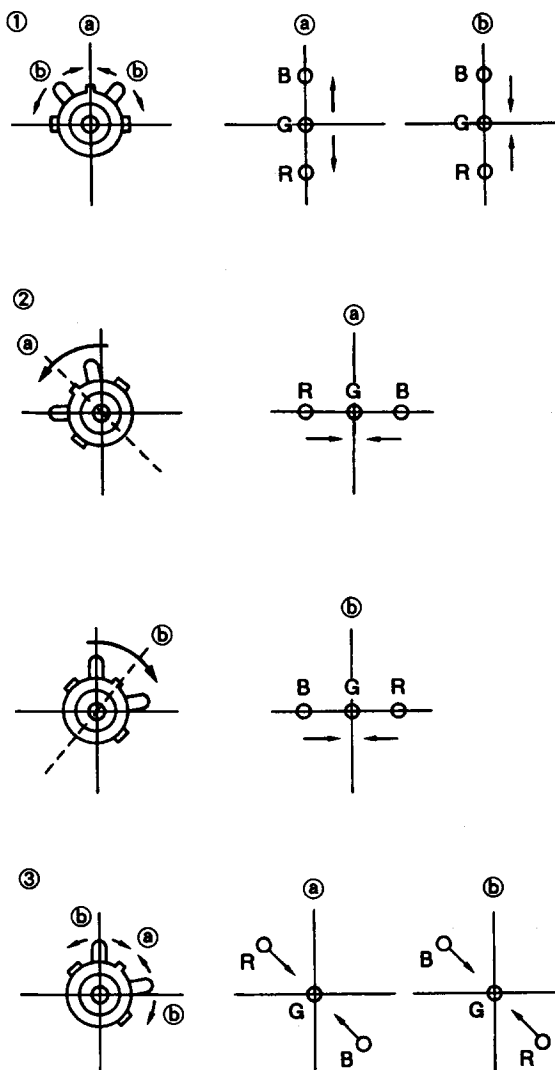
(1) Horizontal and Vertical Static Convergence



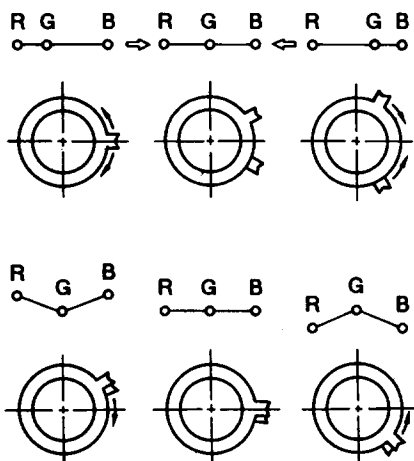
1. Adjust H. STAT VR to coincide red, green and blue dots on the centre of screen. (Horizontal movement)
 2. Adjust V. STAT magnet to coincide red, green and blue dots on the centre of screen. (Vertical movement)
 3. If the red, green and blue dots do not coincide on the centre of screen with H. STAT VR, perform horizontal convergence adjustment using H. STAT VR and V. STAT magnet as shown below. (In this case, H. STAT VR and V. STAT magnet effect each other.)
- Tilt the V. STAT magnet and adjust static convergence to open or close the V. STAT magnet.



4. When the V. STAT magnet is moved in the direction of arrow (a) and (b), red, green and blue dots move as shown below.

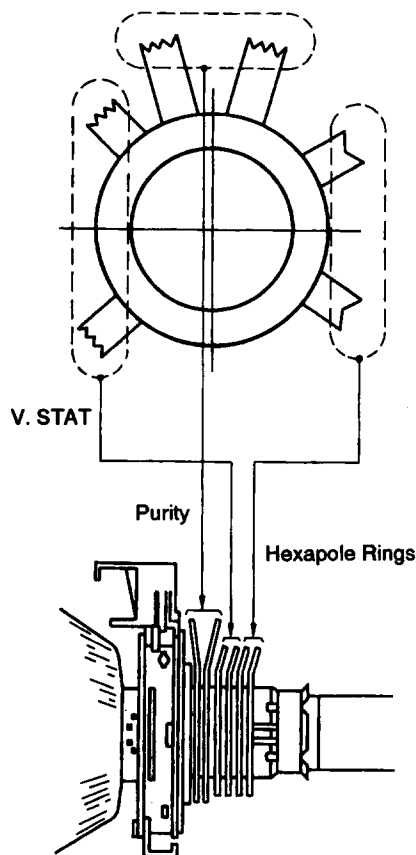


• **Operation of Hexapole Ringed Magnet**



The respective dot operations resulting from the operation of each magnet are not completely independent, so be sure to perform adjustment while tracking.

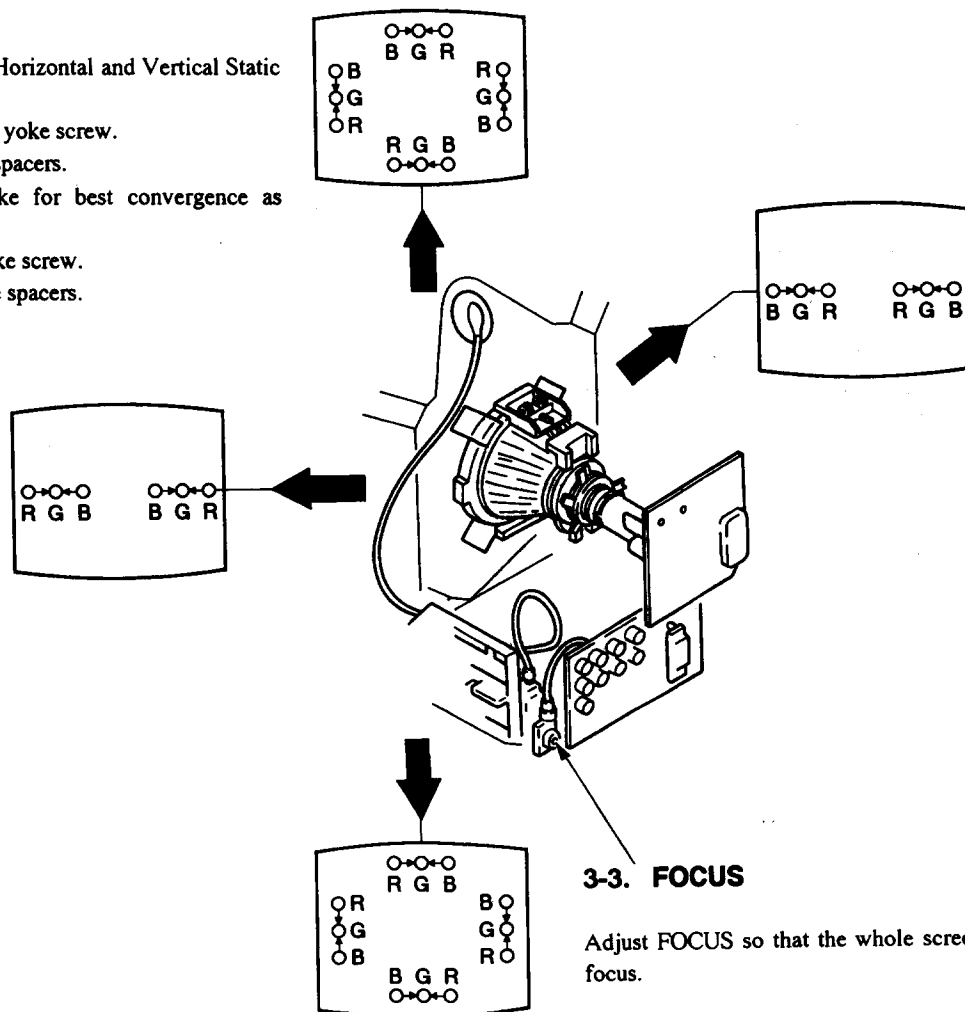
Use the H. STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



(2) Dynamic Convergence Adjustment

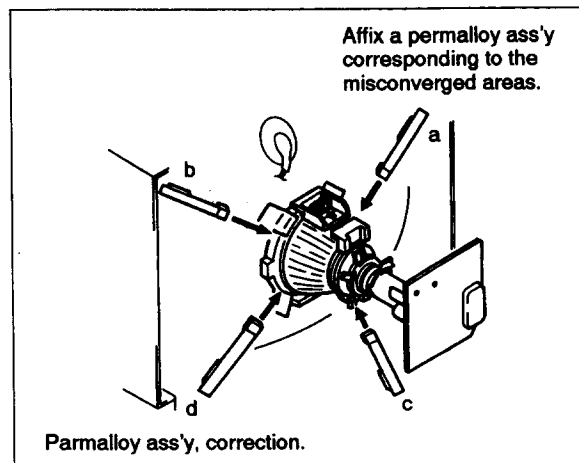
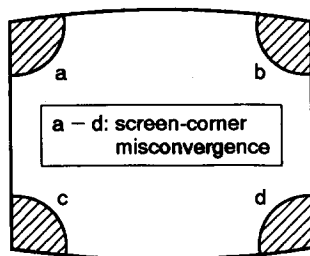
Preparation:

- Before starting, perform Horizontal and Vertical Static Convergence Adjustment.
- 1. Slightly loosen deflection yoke screw.
- 2. Remove deflection yoke spacers.
- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.



3-3. FOCUS

Adjust FOCUS so that the whole screen is in best focus.

(3) Screen-corner Convergence**3-4. WHITE BALANCE****[Screen (G2) Setting]**

1. Input dot signals from the pattern generator.
2. Set the picture and brightness control to the minimum level.
3. Apply 170 V dc to the cathodes of R, G, and B from an external power source.
4. While watching the picture, adjust the G2 volume (RV701) immediately before the fly-back line disappears.

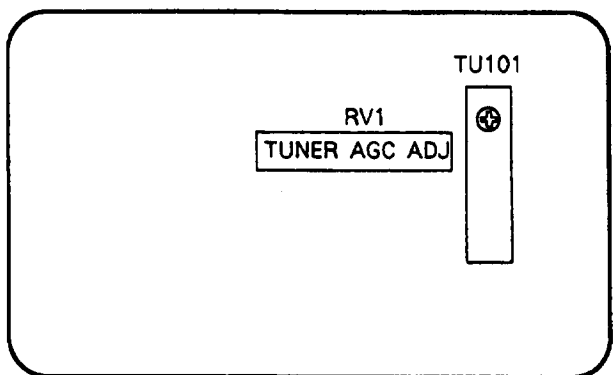
[White Balance Adjustment]

1. Input all-white signals from the pattern generator.
2. Adjust the BRIGHTNESS and COLOUR controls to the standard level.
3. Adjust the white balance using RV704 (B DRIVE) and RV703 (G DRIVE).

In the following adjustments, the CONTRAST COLOUR and BRIGHTNESS controls are set to normal unless otherwise specified.

SECTION 4 CIRCUIT ADJUSTMENTS

4-1. A BOARD ADJUSTMENT

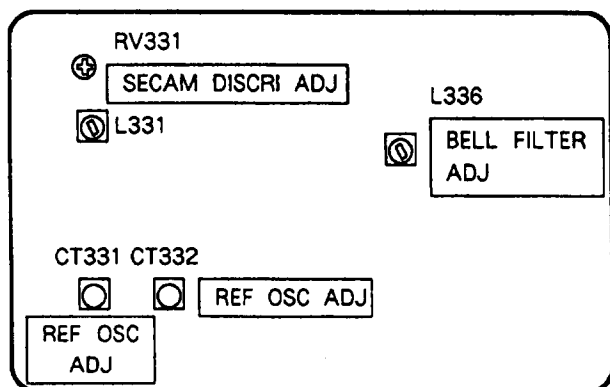


(COMPONENT SIDE)

TUNER AGC ADJUSTMENT (VIF101, RV1)

1. Align with an appropriate signal between stations.
2. Adjust RV1 so that snow noise and cross modulation just disappear from the picture.

4-2. B BOARD ADJUSTMENTS



(COMPONENT SIDE)

REFERENCE OSCILLATOR ADJUSTMENT (CT332 8.8MHz)

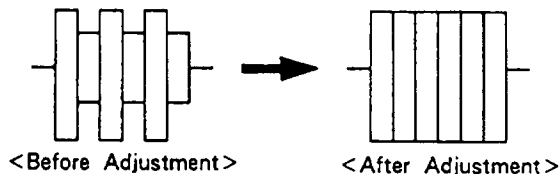
1. Input a PAL color bar signal.
2. Ground pin ⑰ of the IC331.
3. Adjust CT332 to obtain synchronization.

REFERENCE OSCILLATOR ADJUSTMENT (CT331 7.16MHz)

1. Input an NTSC color bar signal.
2. Ground pin ⑰ of IC331.
3. Adjust the CT331 to obtain synchronization.
4. Remove the jumper grounding pin ⑰ of IC331.

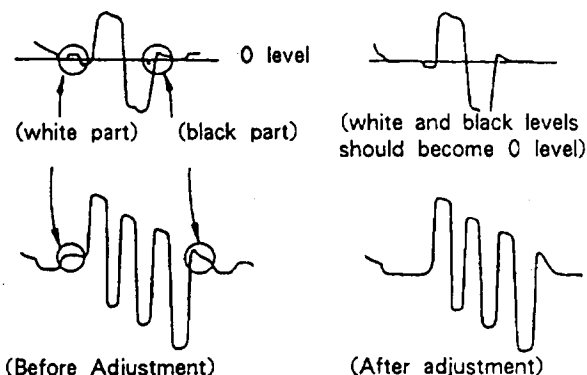
BELL FILTER ADJUSTMENT (L336)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to the emitter of Q335.
3. Adjust L336 so that the waveform is flat.

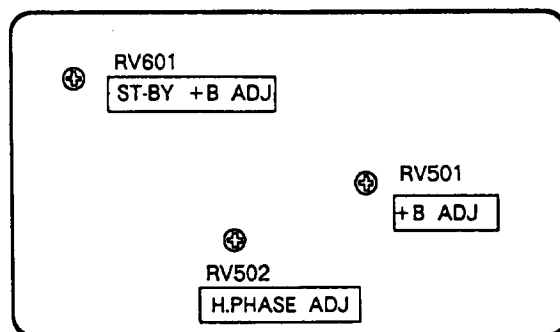


DISCRIMINATION ADJUSTMENT (RV331 and L331)

1. Input a SECAM color bar signal.
2. Connect the oscilloscope to pin ① of IC331.
3. Adjust RV331 so that the white and black sections of the waveform at pin ① come to the 0 level.
4. Connect the oscilloscope to pin ③ of IC331.
5. Adjust L331 so that the white and black sections of the waveform at pin ③ come to the 0 level.



4-3. D BOARD ADJUSTMENTS



+B ADJUSTMENT (RV501)

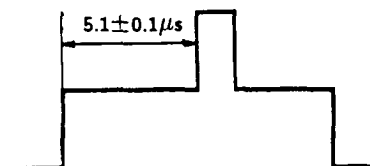
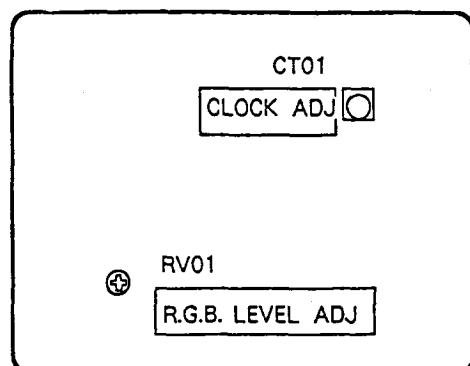
1. Connect the digital multimeter to TP91.
2. Adjust RV501 to obtain $135 \pm 0.2V$.

ST-BY +B ADJUSTMENT (RV601)

1. Put the system into ⏻ standby mode (remote commander).
2. Connect the digital multimeter to TP91.
3. Adjust RV601 to obtain $135 \pm 3\text{V}$.
4. Take the system out of ⏻ standby mode (remote commander).

H.PHASE ADJUSTMENT (RV502)

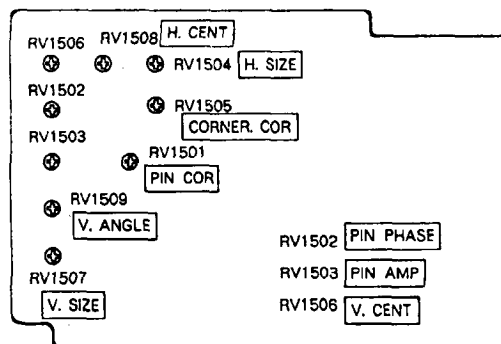
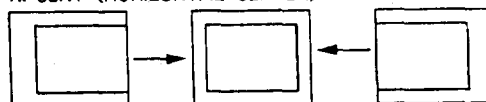
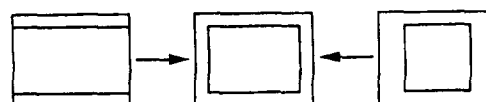
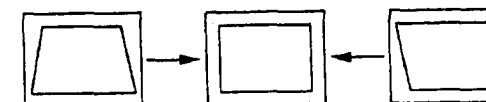
1. Input a PAL color bar signal.
2. Set the picture and brightness controls to their normal levels.
3. Set RV1508 (H.CENT) to its mechanical center.
4. Connect the oscilloscope to pin ⑪ (SCP) of IC 501.
5. Rotate RV502 to adjust to $5.1 \pm 0.1\mu\text{s}$.

**4-4. V BOARD ADJUSTMENT****CLOCK ADJUSTMENT (CT01)**

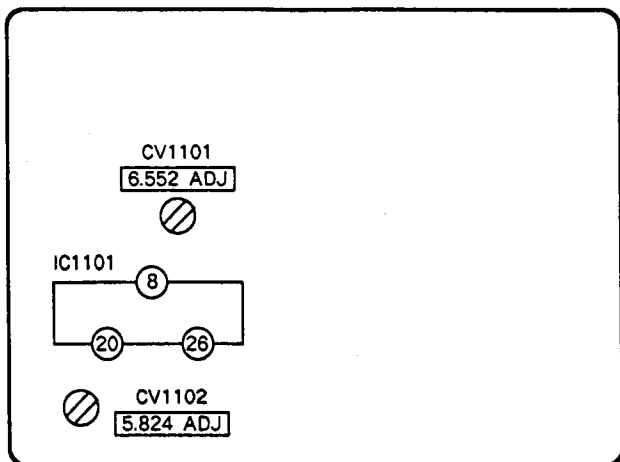
1. Remove the V-1 connector.
2. Put the system into Text mode.
3. Adjust CT01 so that the picture does not move.

RGB LEVEL ADJUSTMENT (RV01)

1. Maximize the picture setting.
2. Adjust RV01 so that the RGB output is 0.75V.

4-5. J1 BOARD ADJUSTMENTSRV1508
H. CENT (HORIZONTAL CENTER)RV1504
H. SIZE (HORIZONTAL SIZE)RV1506
V. CENT (VERTICAL CENTER)RV1507
V. SIZE (VERTICAL SIZE)RV1509
V. ANGLE (VERTICAL ANGLE)RV1503
PIN AMP (PINCUSHION AMPLIFIER)RV1502
PIN PHASE (PINCUSHION PHASE)RV1501
PIN. COR (PINCUSHION CORRECT)RV1505
CORNER COR (CORNER CORRECT)

4-6. A1 BOARD ADJUSTMENTS



(COMPONENT SIDE)

6.552MHz (CARRIER Freq) Adjustment (CV1101)

1. Tune in a NICAM signal.
 2. Connect the frequency counter to pin ⑧ of IC1101.
 3. Adjust CV1101 so that frequency becomes 6.552MHz ± 30 Hz.
- Confirmation
Connect X input of oscilloscope to IC1101 pin ⑨, and Y to pin ⑩.
Confirm waveform by X-Y mode.
Confirm that waveform as OK in Fig observed clearly and without tilt.

5.824MHz (Clock Freq) Adjustment (CV1102)

1. Tune in a NICAM signal.
2. Connect the frequency counter to pin ⑥ of IC1101.
3. Adjust CV1102 so that frequency becomes 5.824MHz ± 30 Hz.



4-7. SECONDARY ADJUSTMENT

SUB BRIGHTNESS ADJUSTMENT

1. Set the system to receive a test pattern.
2. Press $\rightarrow \cdot \leftarrow$ on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the \odot contrast setting.
6. Adjust the \odot brightness control so that the gray scale 0 IRE section is cut off completely and the 20 IRE section is barely glowing.

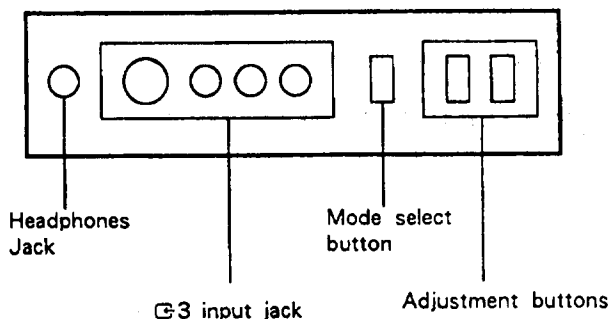
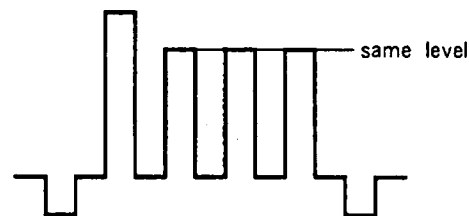
7. Depress the \diamond (store) button of the remote commander.
(SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press on the remote commander to put system into normal mode.
Set the \odot color to its normal state.
- 3-5. are the same as above.
6. Since 20 IRE is nearly blue, adjust the \odot brightness control so that the blue barely glows.
7. is the same as above.
8. Press $\rightarrow \cdot \leftarrow$ on the remote commander to put the system into normal mode.

SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press $\rightarrow \cdot \leftarrow$ on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjustment buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Adjust the color control so that the B out waveform (pin ② of C board connector CNC72) is as shown in the figure below.
6. Depress the \diamond (store) button of the remote commander. (SUB mode is released)



4-6. SECONDARY ADJUSTMENTS

SUB BRIGHTNESS ADJUSTMENT

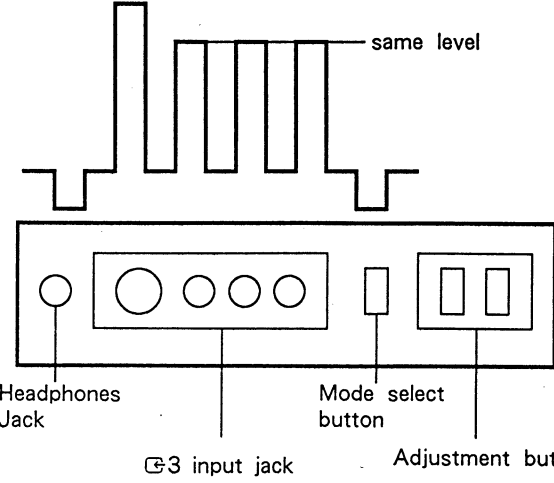
1. Set the system to receive a test color pattern.
2. Press →← on the remote commander to put the system into normal mode.
3. Switch off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Minimize the ● contrast setting.
6. Adjust the ✱ brightness control so that the gray scale O IRE section is cut off completely and the 20 IRE section is barely glowing.
7. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

If there is no test color pattern

1. Set the system to receive a color pattern.
2. Press on the remote commander to put system into normal made.
- Set the ● color to its normal state.
- 3.-5. are the same as above.
6. Since 20 IRE is nearly blue, adjust the ✱ brightness control so that the blue barely glows.
7. is the same as above.
8. Press →← on the remote commander to put the system into normal mode.

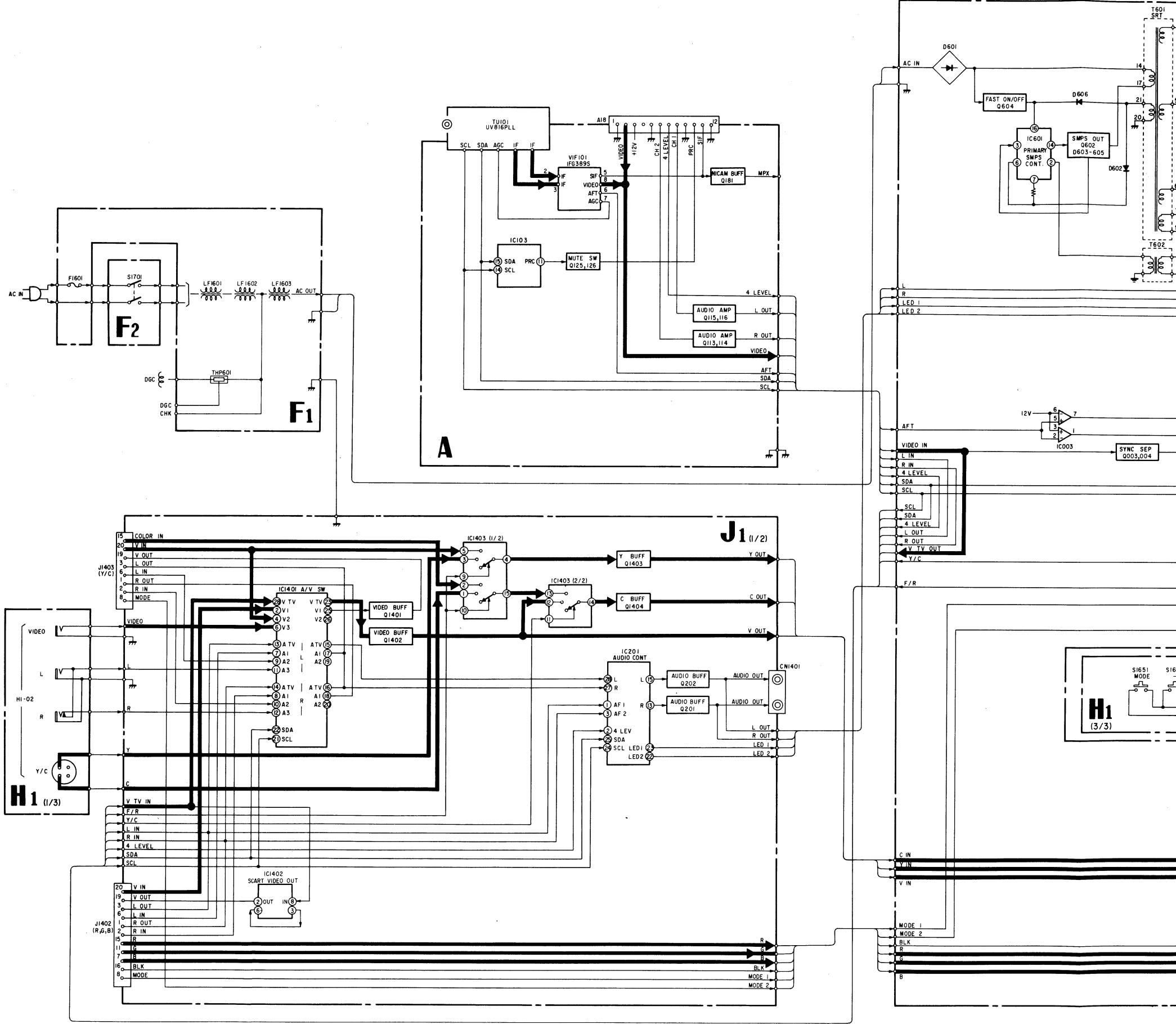
SUB COLOR ADJUSTMENT

1. Set the system to receive color bars.
2. Press →← on the remote commander to put the system into normal mode.
3. Cut off the power.
4. While depressing the adjusting buttons + and - simultaneously, turn on the power. (SUB mode is obtained)
5. Adjust the color control so that the B out wave form (Pin ② of C board connector CNC72) is as shown in the figure below.
6. Depress the ◇ (store) button of the remote commander. (SUB mode is released)

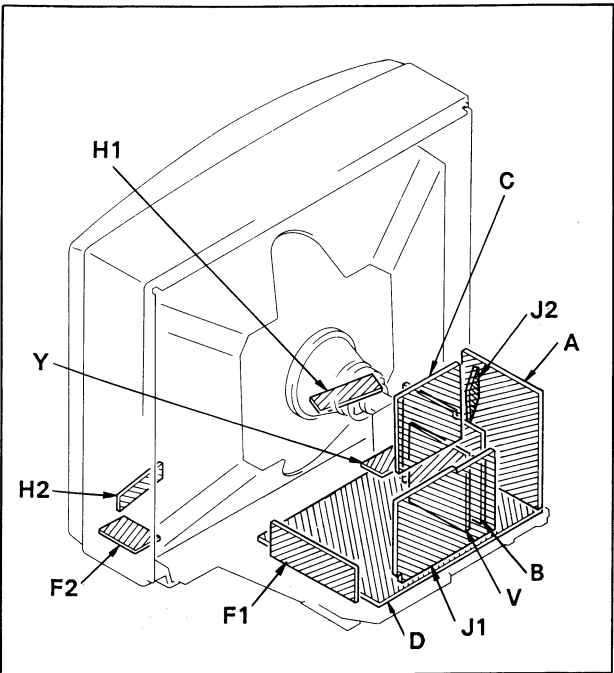



SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



5-2. CIRCUIT BOARDS LOCATION









Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note :

- All capacitors are in μF unless otherwise noted.
 $\text{pF} : \mu\mu\text{F}$ 50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm
Rating electrical power: 1/4W

- Chip resistor is in 1/10W.
- All resistors are in ohms. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
-  : nonflammable resistor.
-  : fusible resistor.
- \triangle : internal component.
-  : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in V.
- Readings are taken with a $10\text{M}\Omega$ digital multimeter.
- Readings are taken with a color-bar signal input.
-  : adjustment for repair.
- Voltage variations may be noted due to normal production tolerances.
-  : B+ line.
-  : signal path.

5-3. SCHEMATIC DIAGRAMS AND
PRINTED WIRING BOARDS —Conductor Side—

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
CAPACITOR	: ALR	HIGH RIPPLE

F1

[LINE FILTER, DGC]

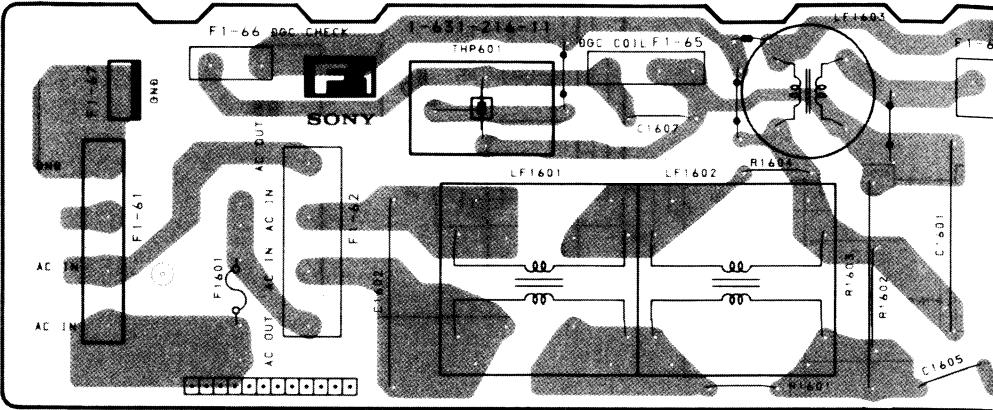
F2

[POWER SWITCH]

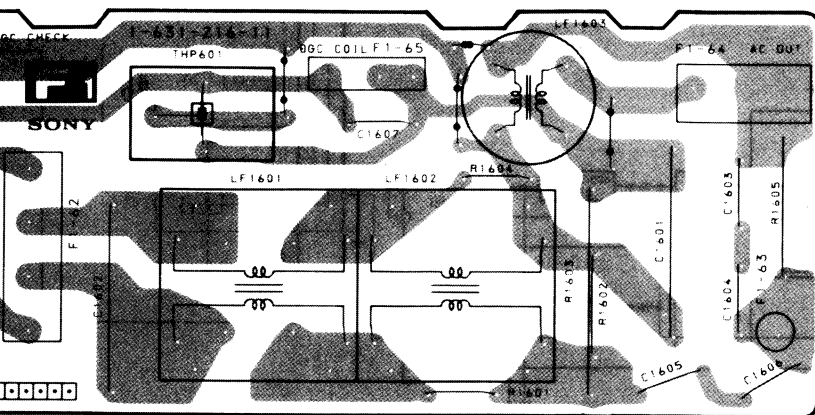
H1

[CONTROL SW
HEADPHONE]

—F1 Board—

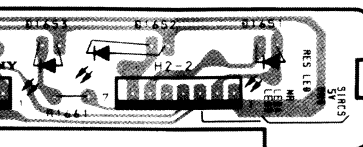
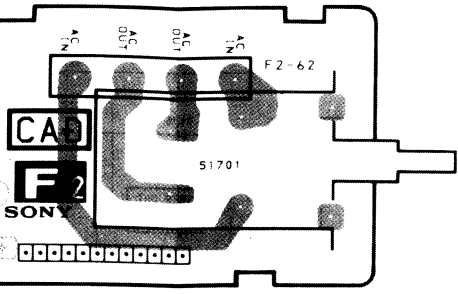


F2 [POWER SWITCH]
H1 [CONTROL SW, AV INPUT, HEADPHONE]
H2 [SIRCS RECEIVER, INDICATOR]
A [TUNER, VIF SIF]
J1 [AUDIO CONTROL, AV INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION]
J2 [SPEAKER TERMINAL]
Y [NOISE REDUCTION]

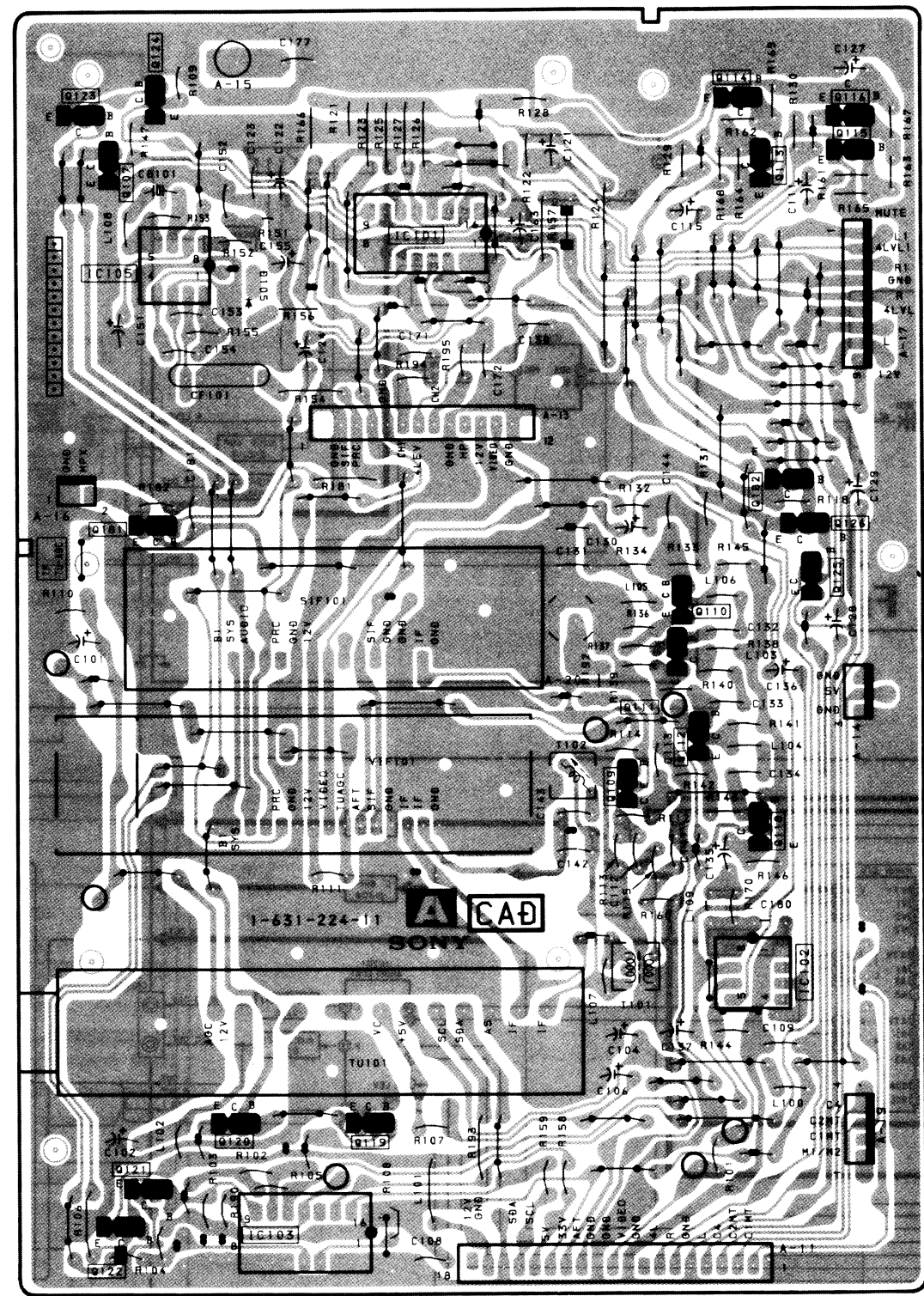


[SRCS RECEIVER, INDICATOR] **A** [TUNER, VIF SIF] **J1** [AUDIO CONTROL, AV INPUT, SCART VIDEO OUT, EAST-WEST CORRECTION] **J2** [SPEAKER TERMINAL] **Y** [NOISE REDUCTION]

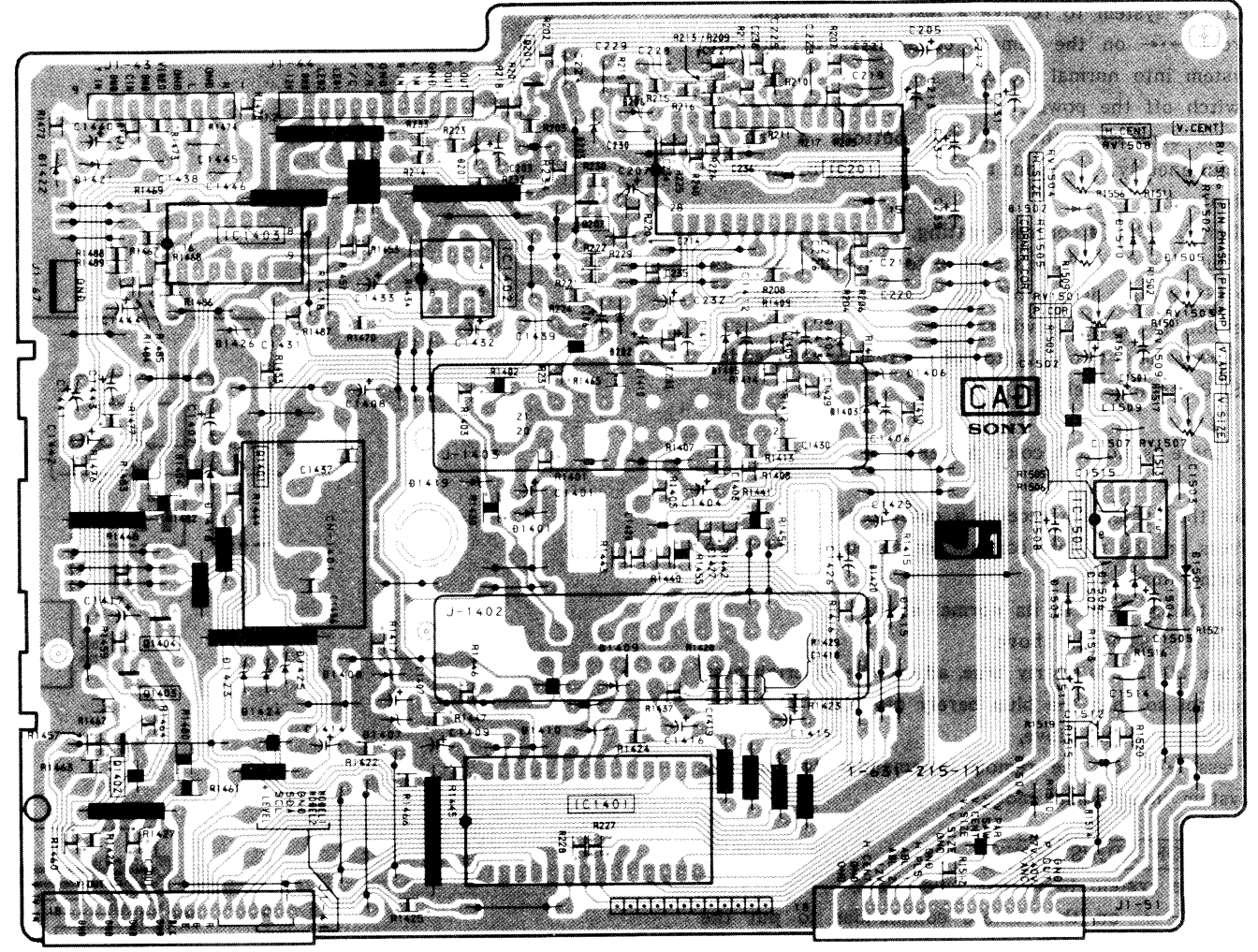
2 Board-



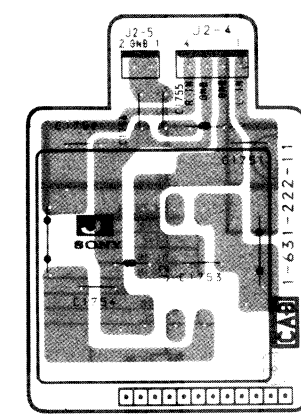
-A Board-



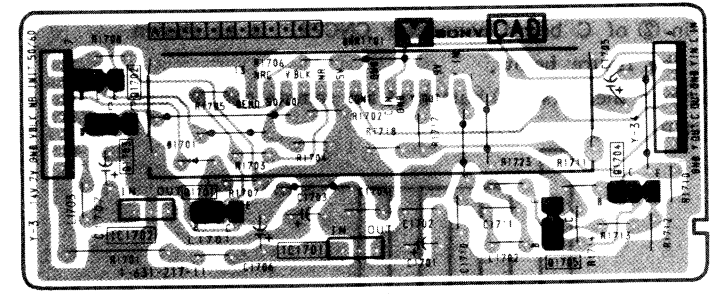
-J1 Board-



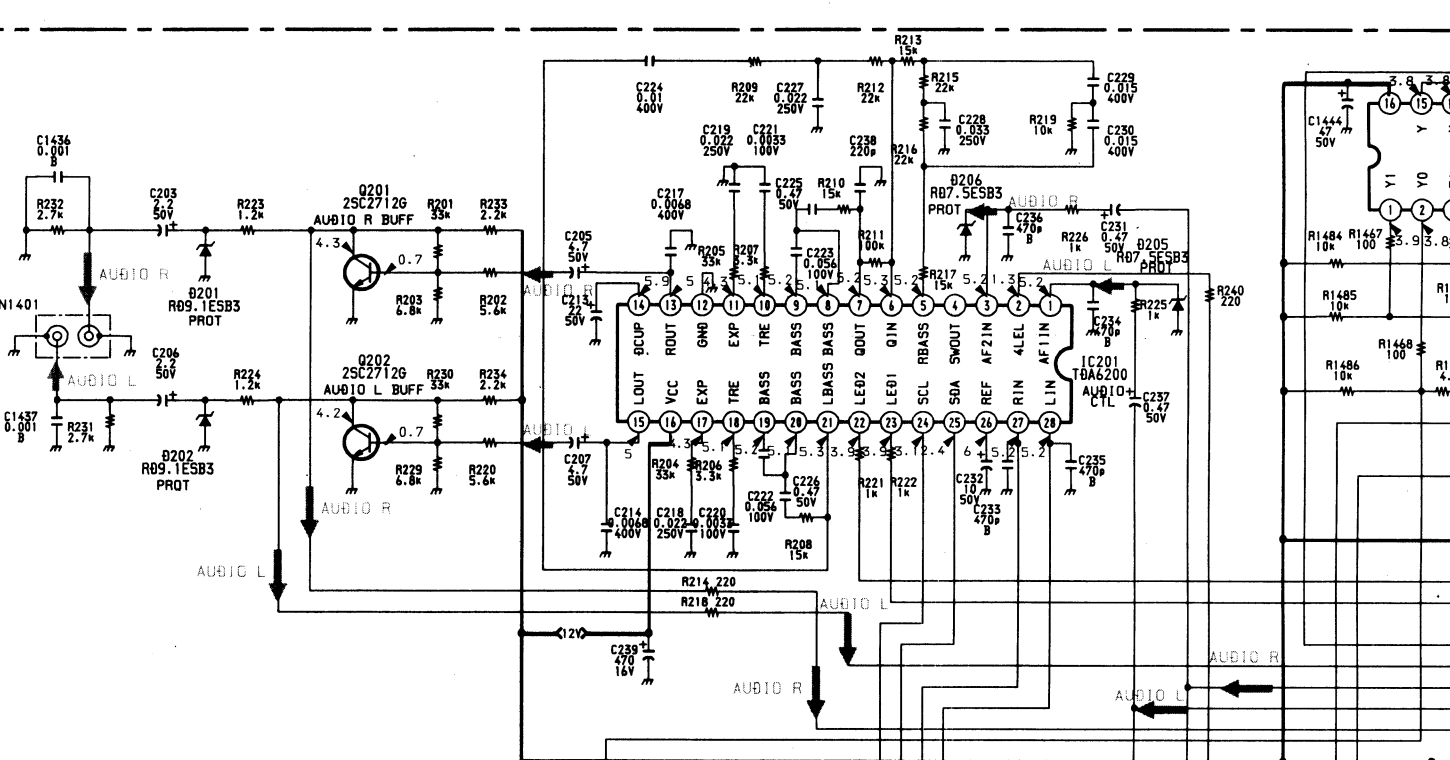
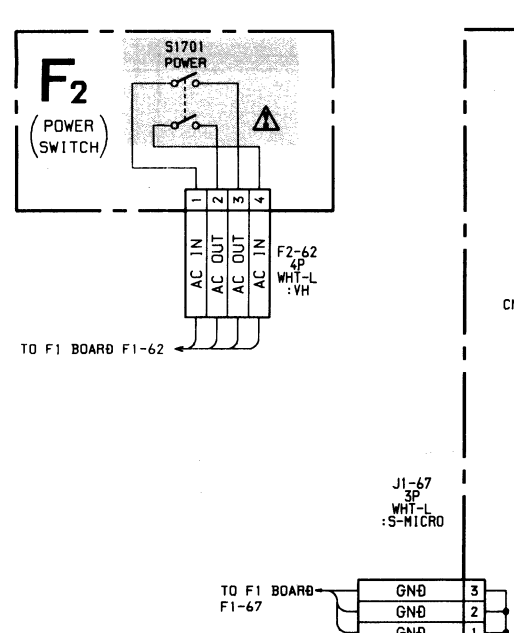
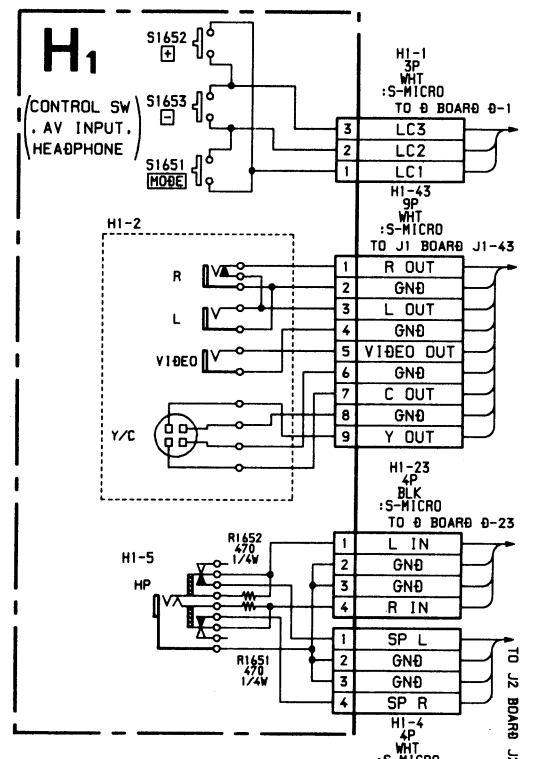
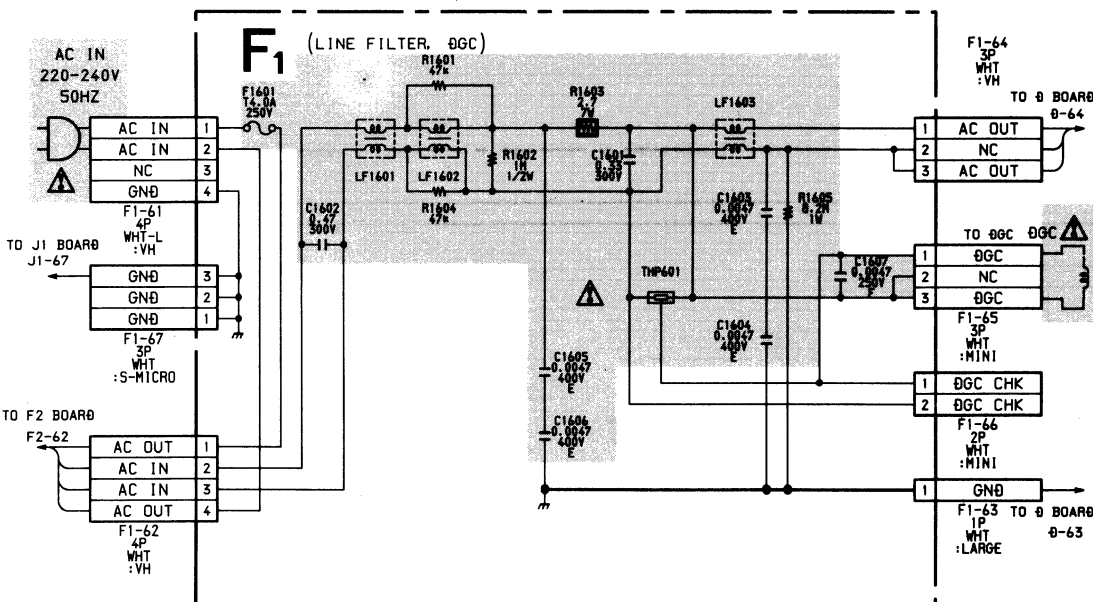
-J2 Board-



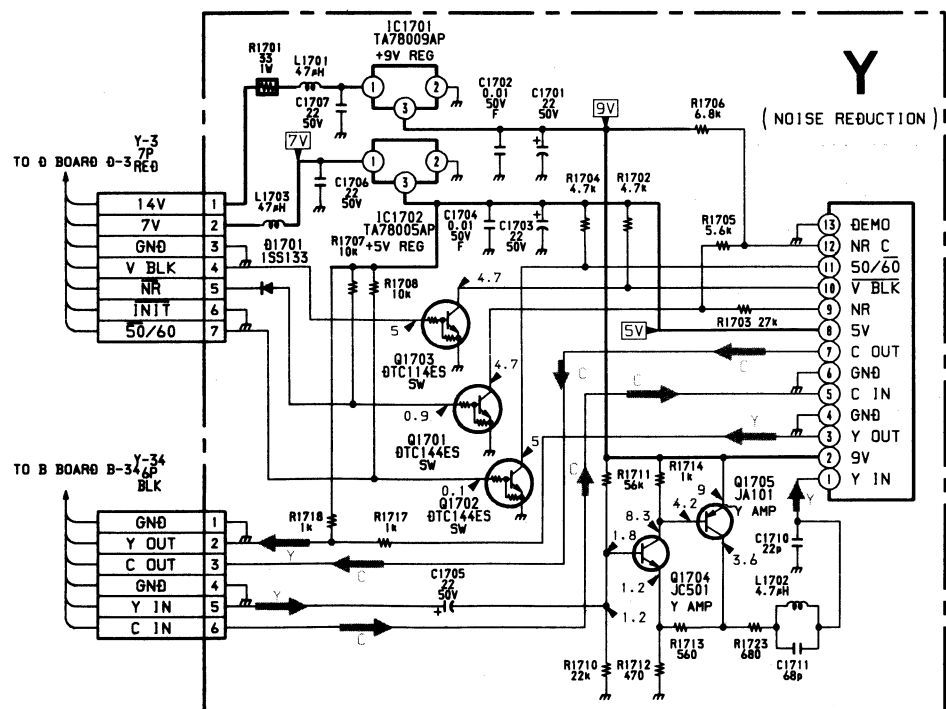
-Y Board-



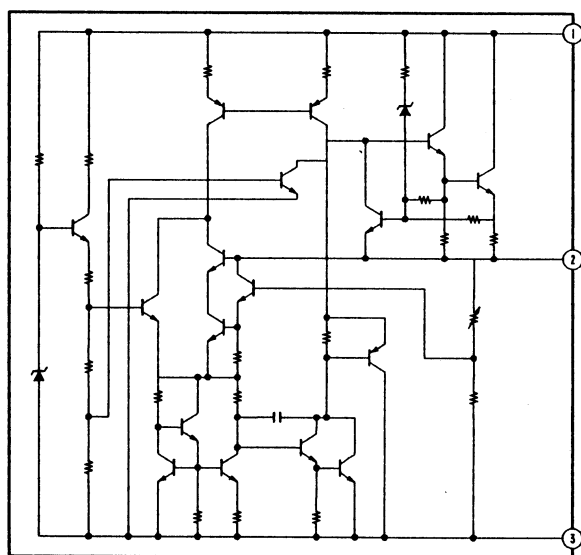
A
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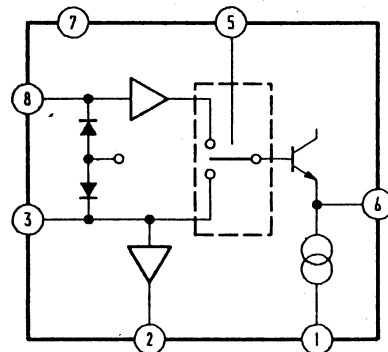




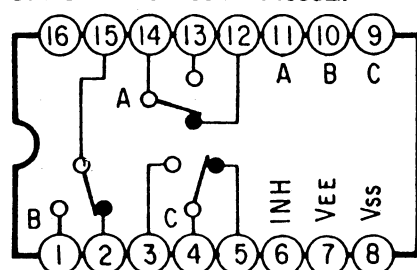
Y BOARD IC701 TA78009AP
Y BOARD IC702 TA78005AP



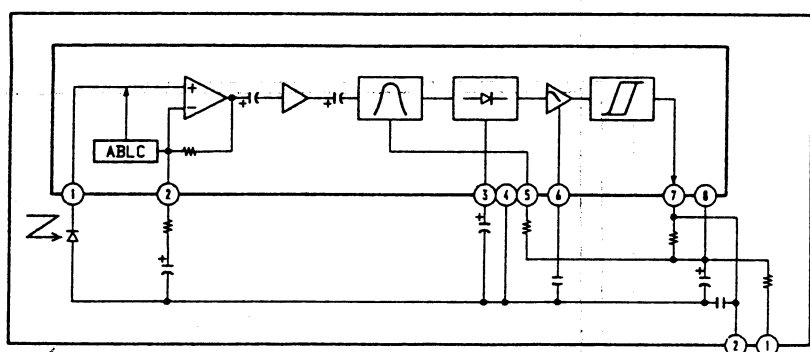
J1 BOARD IC1402 TEA2014A



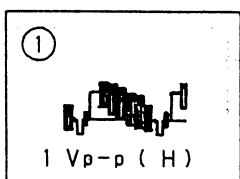
J1 BOARD IC1403 HD14053BP



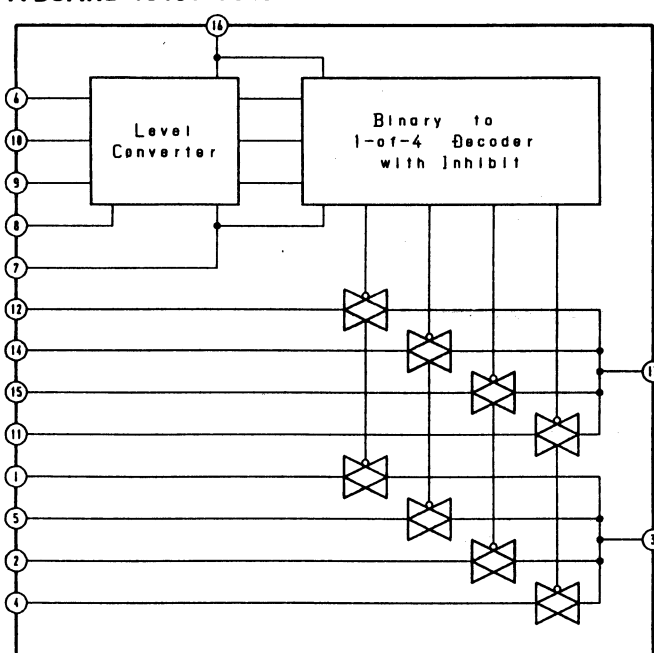
H2 BOARD IC1651 BX1387



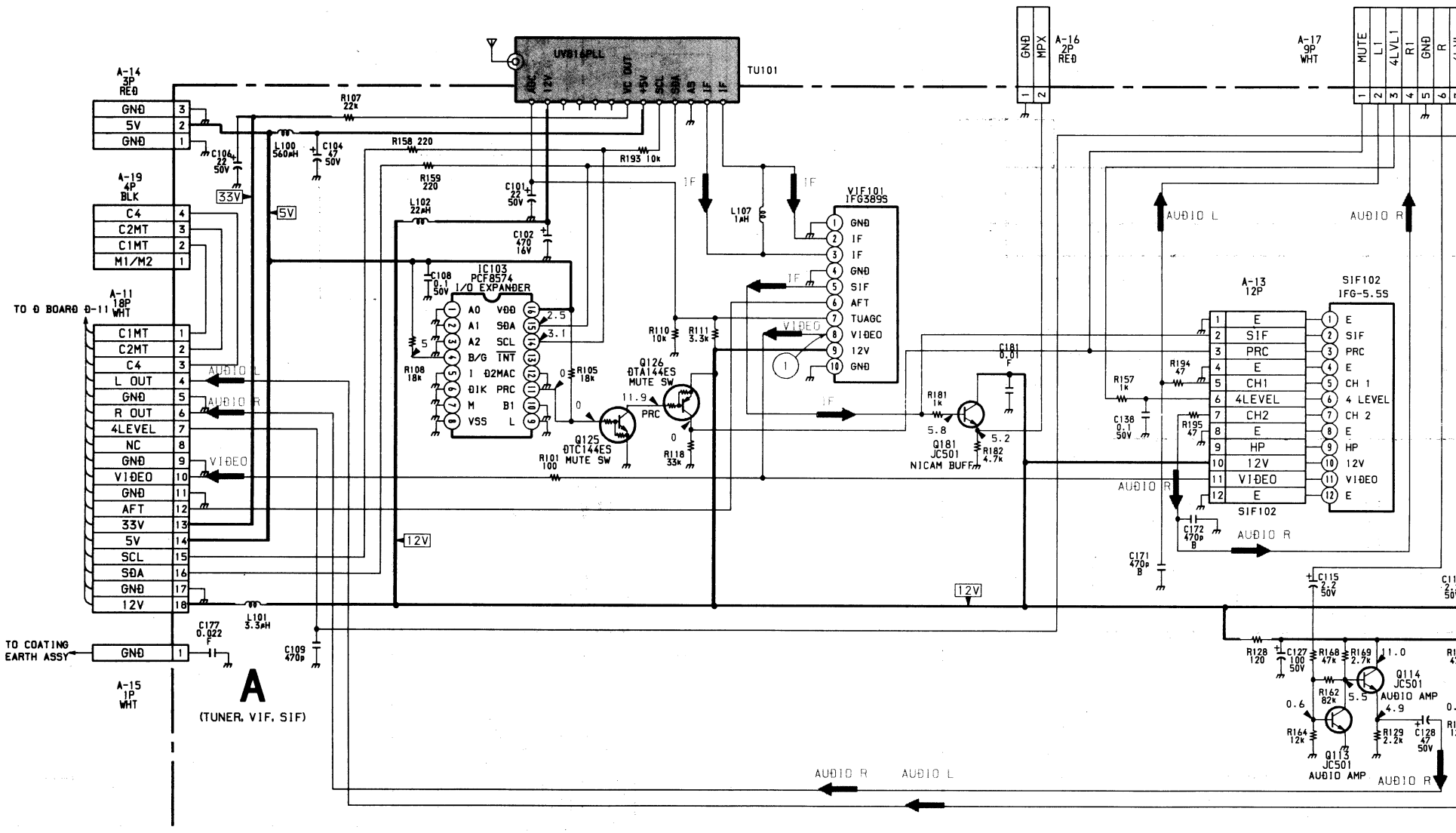
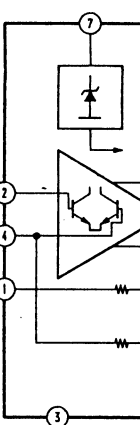
• WAVEFORMS A BOARD

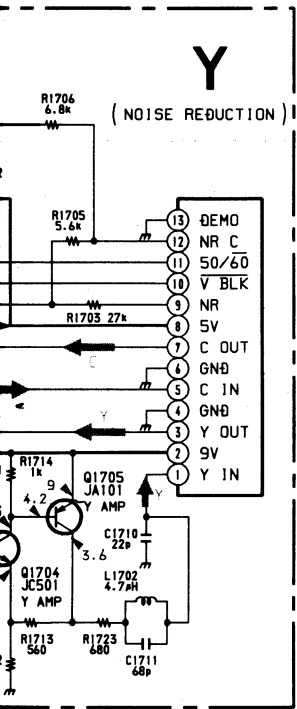


A BOARD IC101 TC4052BPHB

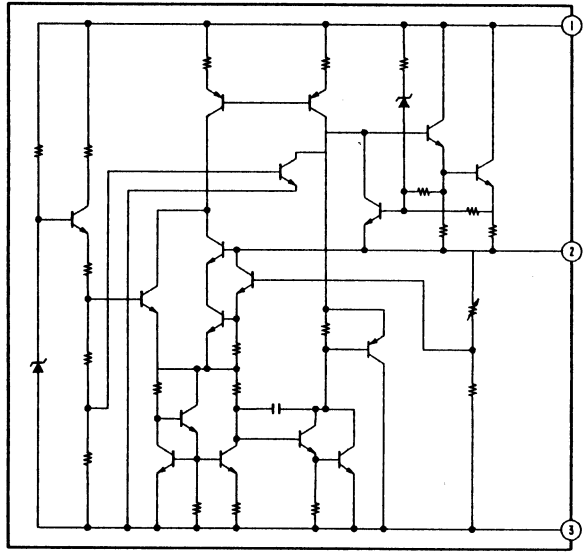


A BOARD IC101 TC4052BPHB

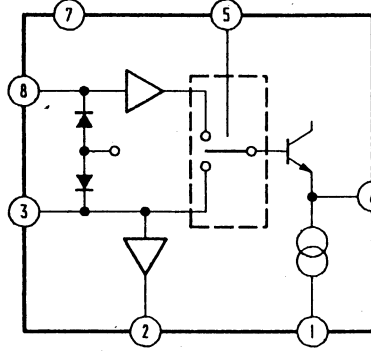




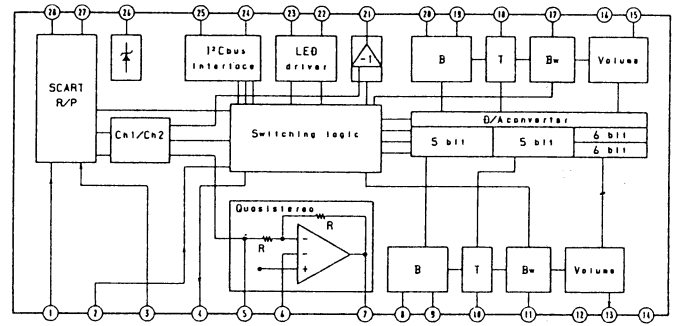
Y BOARD IC701 TA78009AP
Y BOARD IC702 TA78005AP



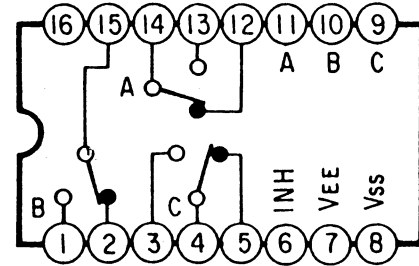
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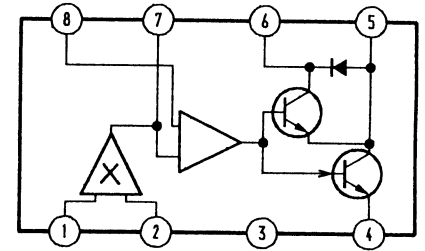
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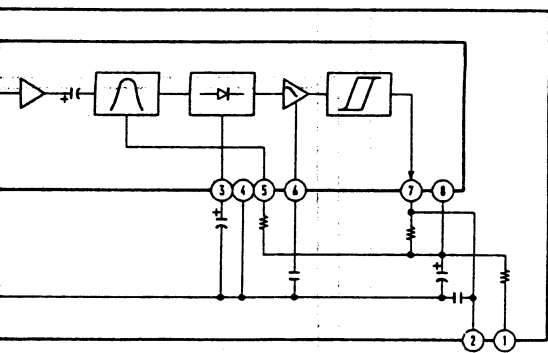
J1 BOARD IC1403 HD14053BP



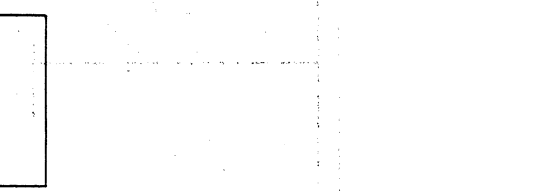
J1 BOARD IC1501 TEA2031



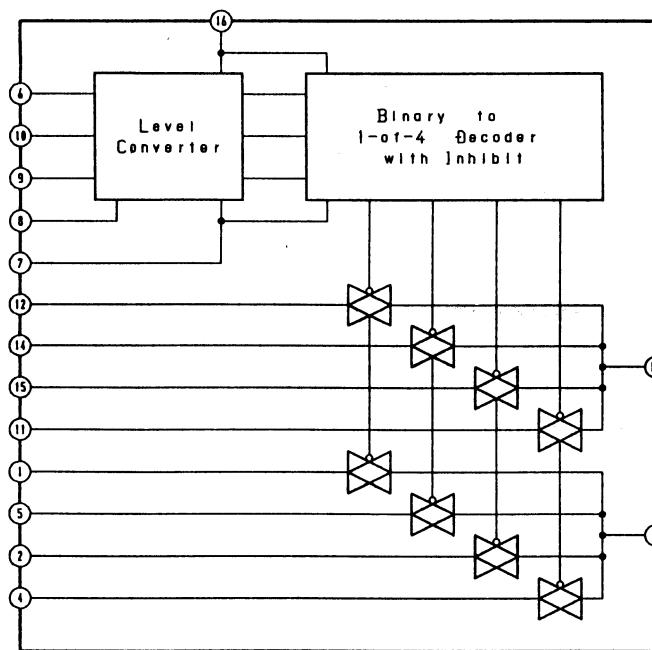
IC1387



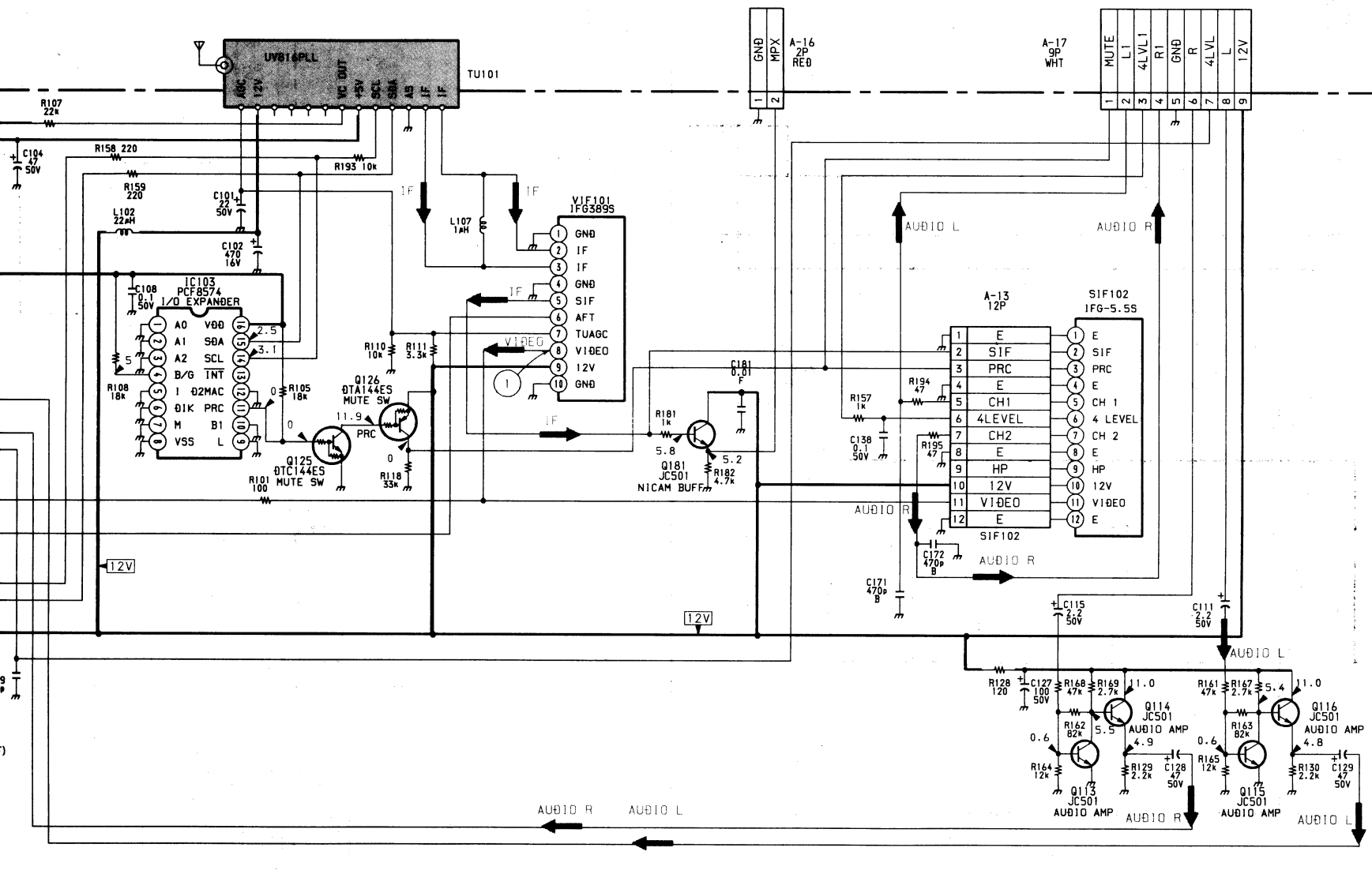
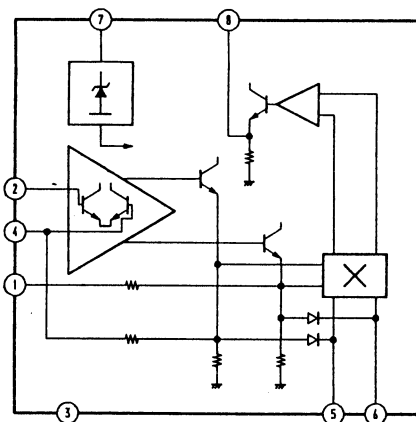
A BOARD



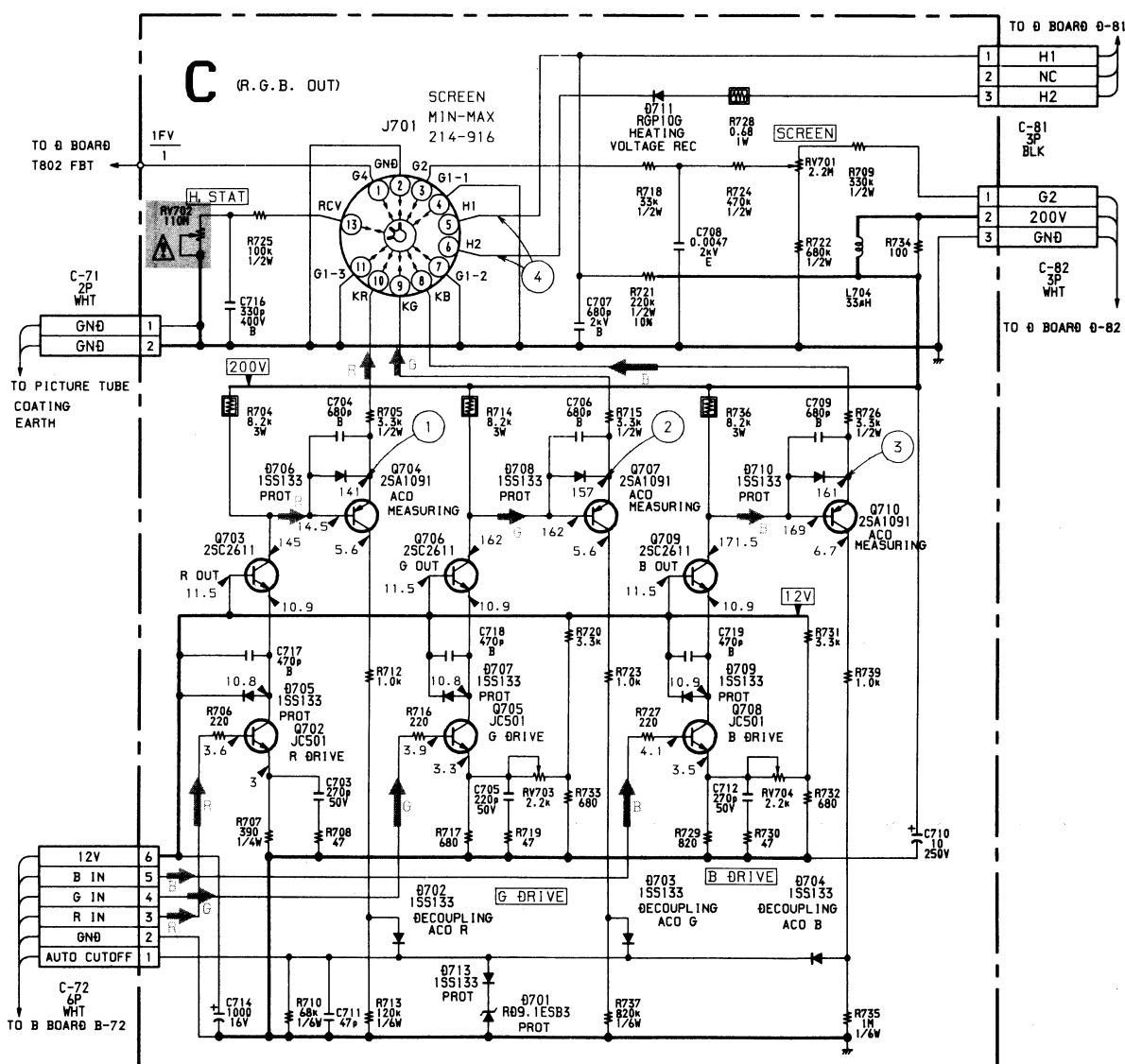
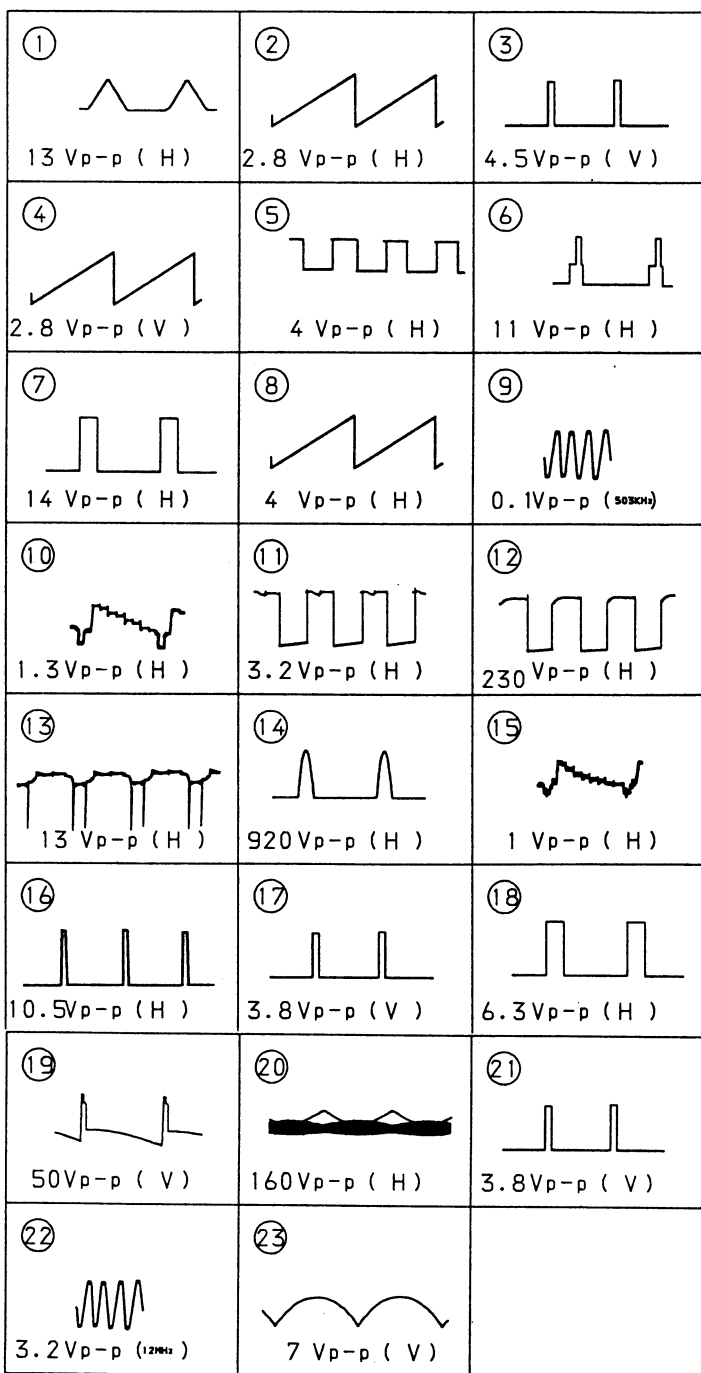
A BOARD IC101 TC4052BPHB



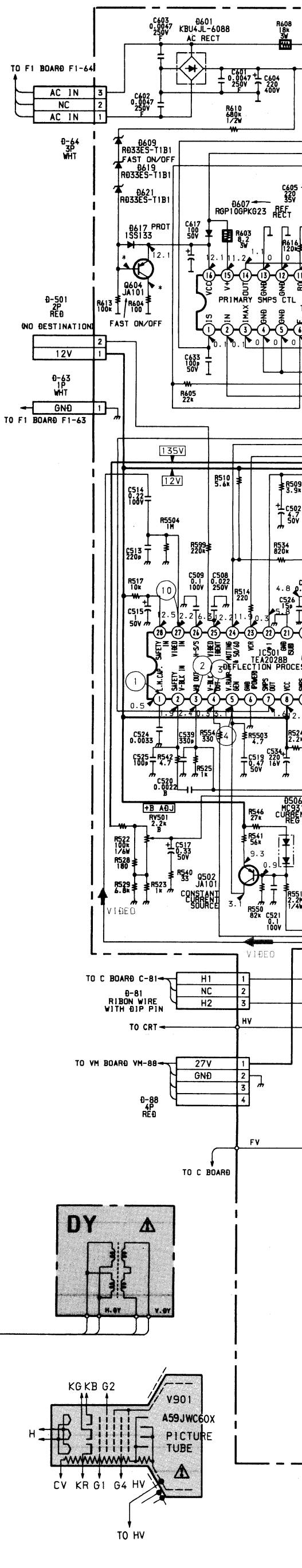
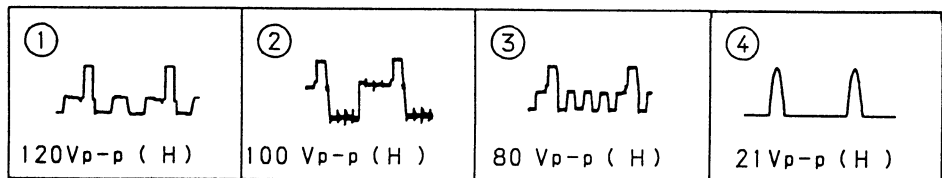
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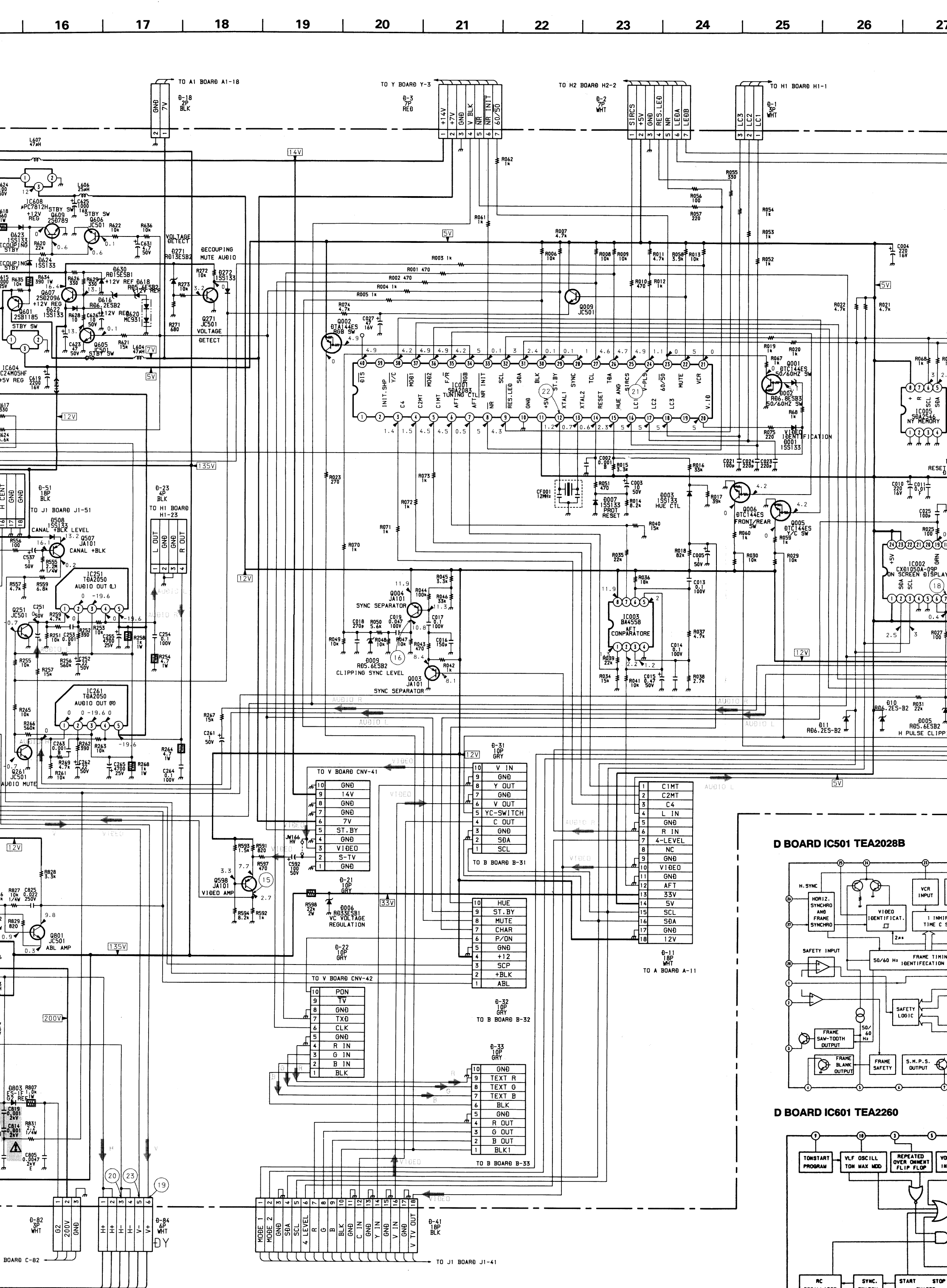


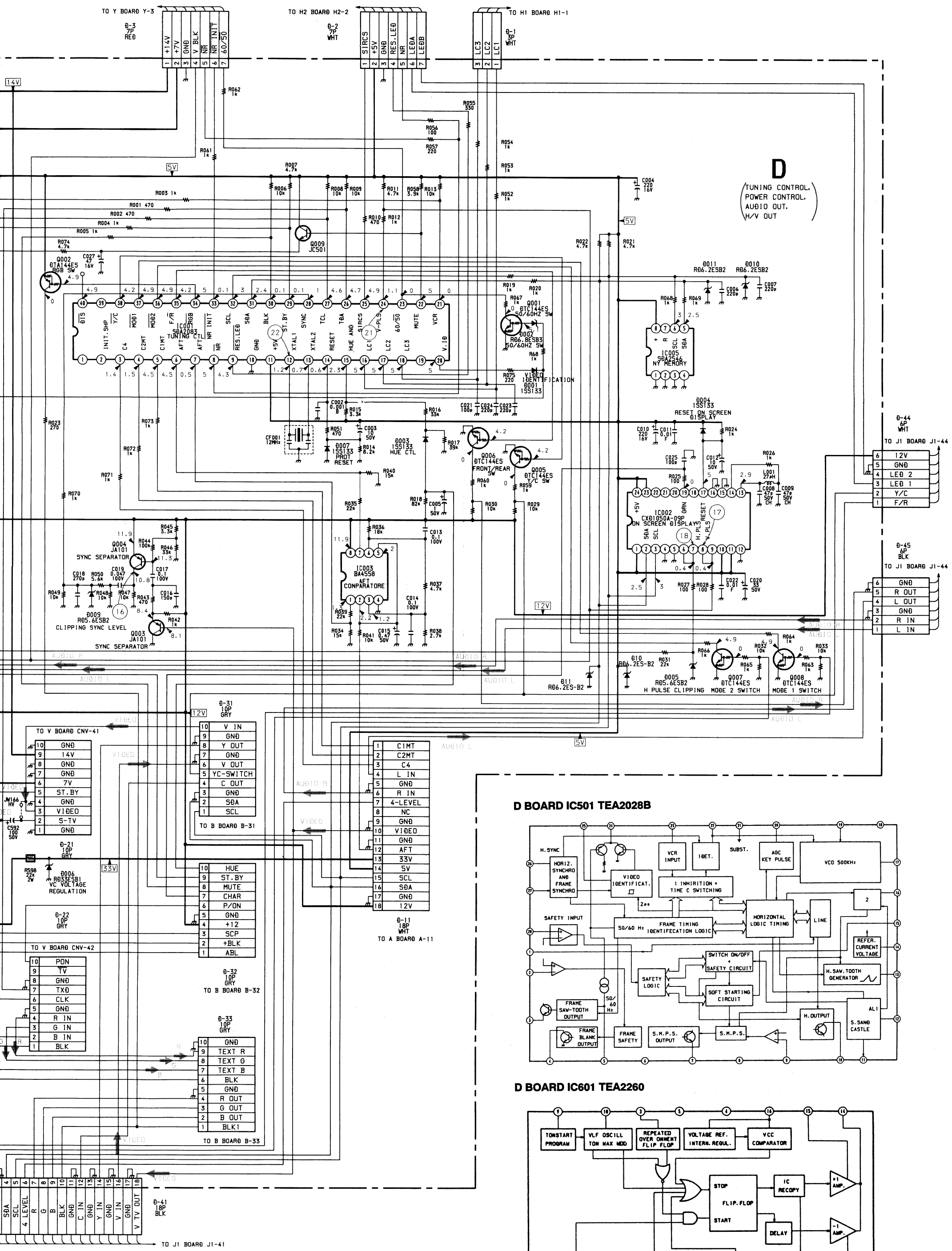
• WAVEFORMS D BOARD



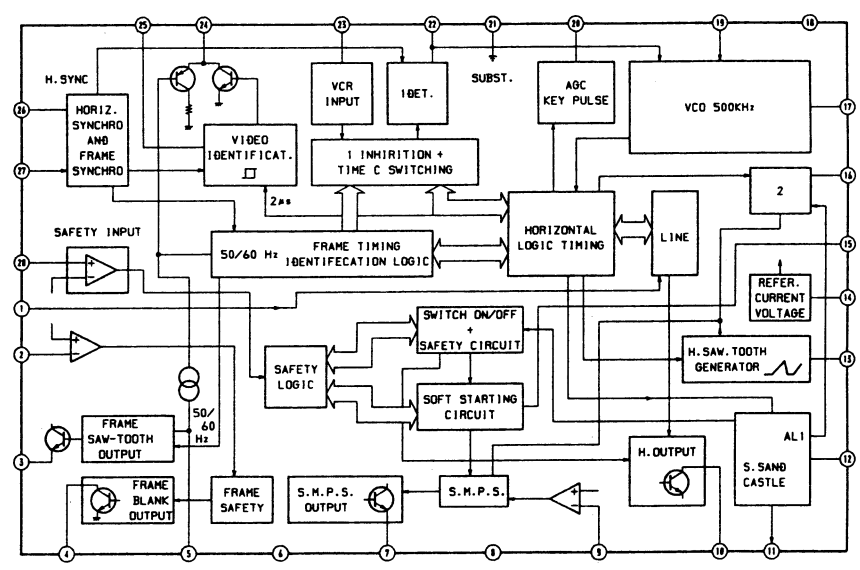
• WAVEFORMS C BOARD



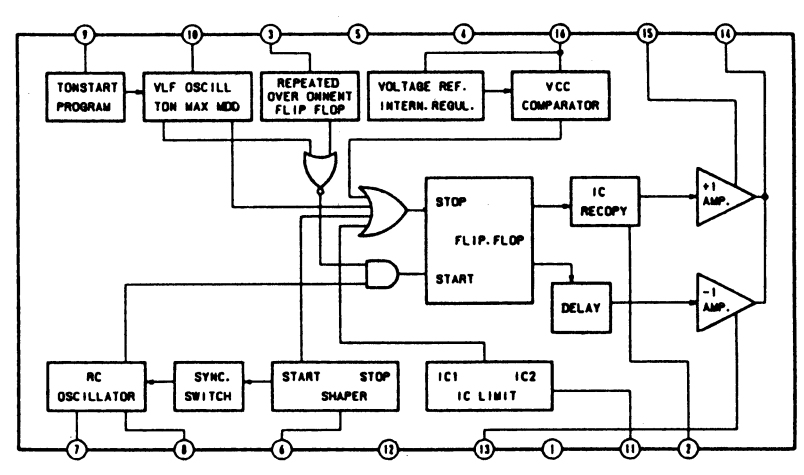




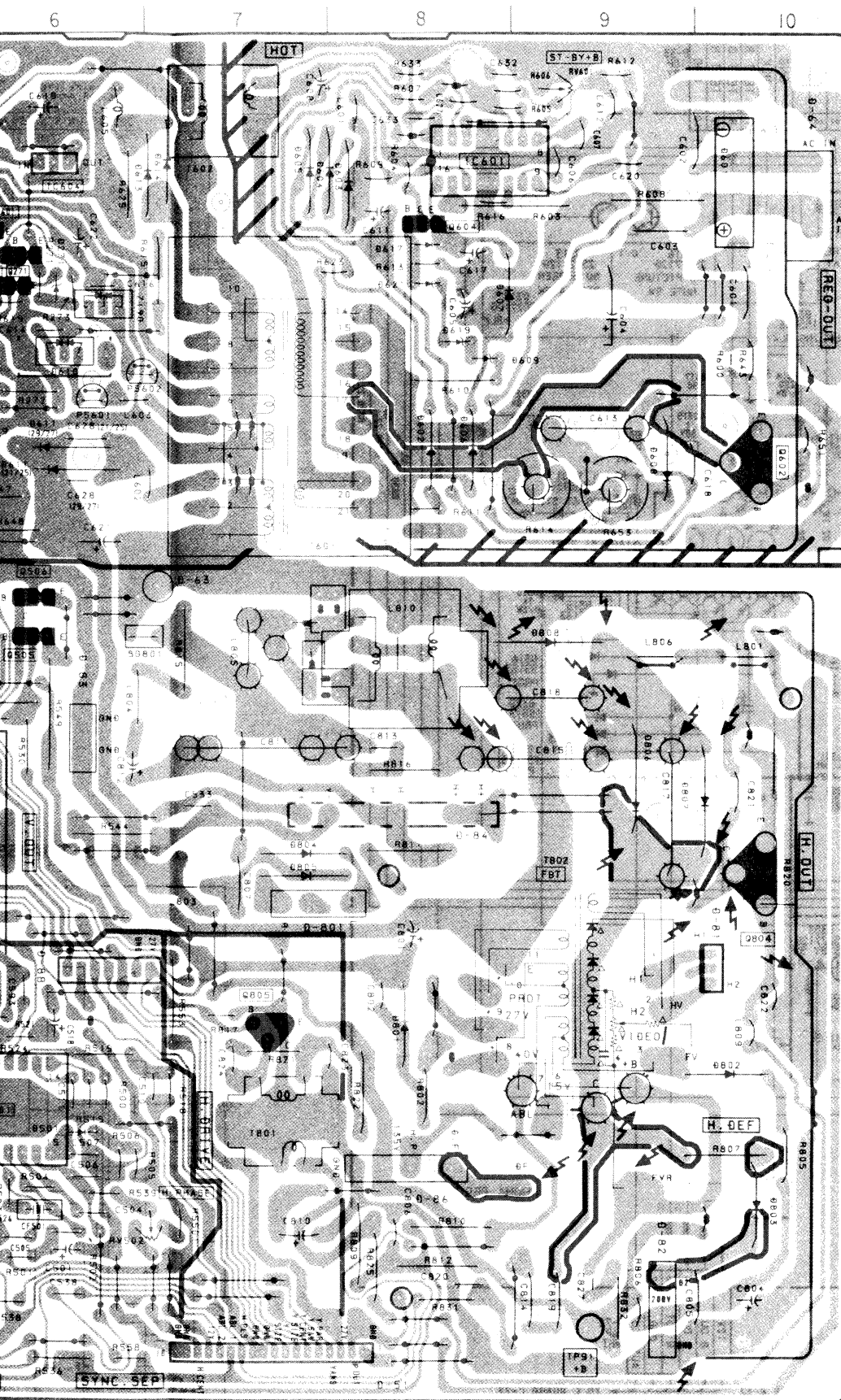
D BOARD IC501 TEA2028B



D BOARD IC601 TEA2260



IC		DIODE			
IC001	B-1	0001	A-3	0803	G-10
IC002	C-2	0002	B-3	0804	E-7
IC003	C-1	0003	A-3	0805	E-7
IC005	F-1	0004	C-2	0806	D-9
IC006	F-1	0005	G-1	0806	E-9
IC251	E-4	0006	E-1	0807	D-9
IC261	C-4	0007	A-2	0808	E-10
IC501	F-6	0008	C-2		
IC502	D-6	0009	D-1		
IC601	A-8	0010	B-2		
IC604	A-6	0011	B-2		
IC608	B-4	0271	B-6		
		0272	B-4		
		0501	F-6		
		0504	D-5		
		0506	F-5		
		0508	G-5		
		0509	C-5		
		0511	D-9		
		0512	D-5		
		0513	D-5		
		0601	A-10		
		0602	C-8		
		0603	A-8		
		0604	A-7		
		0605	A-7		
		0606	C-8		
		0607	B-8		
		0608	C-9		
		0609	B-8		
		0610	B-6		
		0611	C-6		
		0612	B-6		
		0613	A-6		
		0614	A-7		
		0616	C-5		
		0617	B-8		
		0618	C-5		
		0619	B-8		
		0620	C-6		
		0621	B-8		
		0622	C-5		
		0623	B-5		
		0624	B-5		
		0630	C-5		
		0801	F-8		
		0802	F10		
TRANSISTOR				VARIABLE RESISTOR	
Q001	B-3			RV501	E-5
Q002	B-1			RV502	G-6
Q003	D-1			RV601	A-9
Q004	D-1				
Q005	B-1				
Q006	B-1				
Q007	B-1				
Q008	B-1				
Q009					
Q251	E-4				
Q261	C-4				
Q271	B-6				
Q502	F-5				
Q505	D-6				
Q506	C-6				
Q507	G-5				
Q601	A-6				
Q602	C-10				
Q603	B-6				
Q604	B-7				
Q605	C-5				
Q606	B-5				
Q607	B-5				
Q608	B-5				
Q609	B-5				
Q598	G-1				
Q801	G-4				
Q804	E-10				
Q805	F-7				
				TEST POINT	
				TP91	G-9



D BOARD

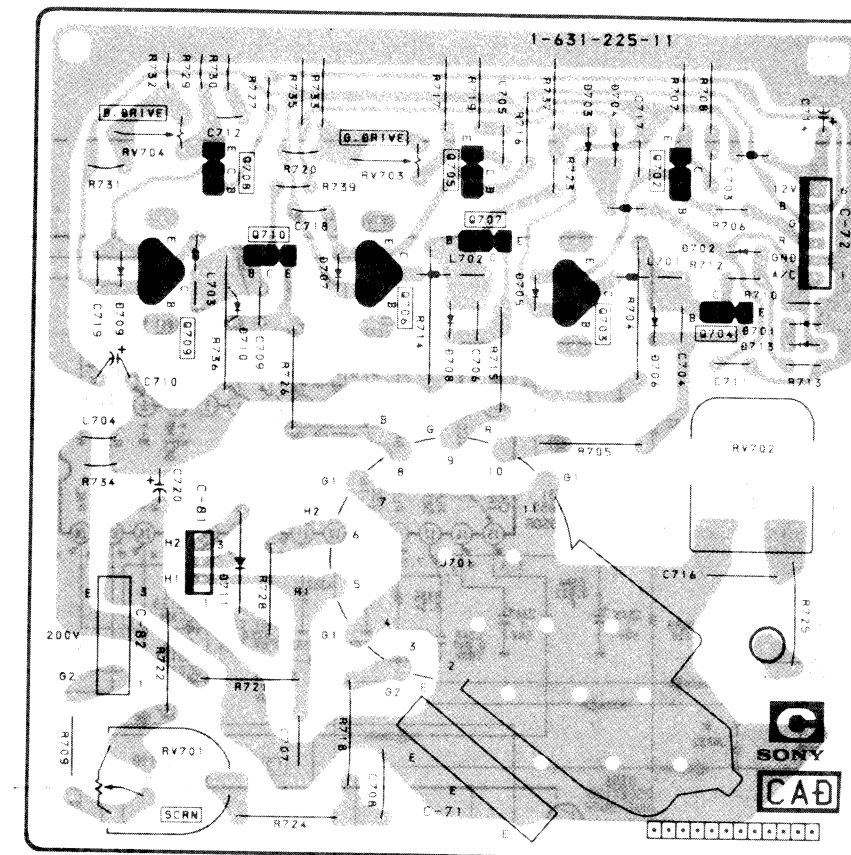
IC		DIODE	
IC001	B-1	D001	A-3
IC002	C-2	D002	B-3
IC003	C-1	D003	A-3
IC005	F-1	D004	C-2
IC006	F-1	D005	G-1
IC251	E-4	D006	E-1
IC261	C-4	D007	A-2
IC501	F-6	D008	C-2
IC502	D-6	D009	D-1
IC601	A-8	D010	B-2
IC604	A-6	D011	B-2
IC608	B-4	D271	B-6
		D272	B-4
		D501	F-6
		D504	D-5
		D506	F-5
		D508	G-5
		D509	C-5
		D511	D-9
		D512	D-5
		D513	D-5
		D601	A-10
		D602	C-8
		D603	A-8
		D604	A-7
		D605	A-7
		D606	C-8
		D607	B-8
		D608	C-9
		D609	B-8
		D610	B-6
		D611	C-6
		D612	B-6
		D613	A-6
		D614	A-7
		D616	C-5
		D617	B-8
		D618	C-5
		D619	B-8
		D620	C-6
		D621	B-8
		D622	C-5
		D623	B-5
		D624	B-5
		D630	C-5
		D801	F-8
		D802	F10

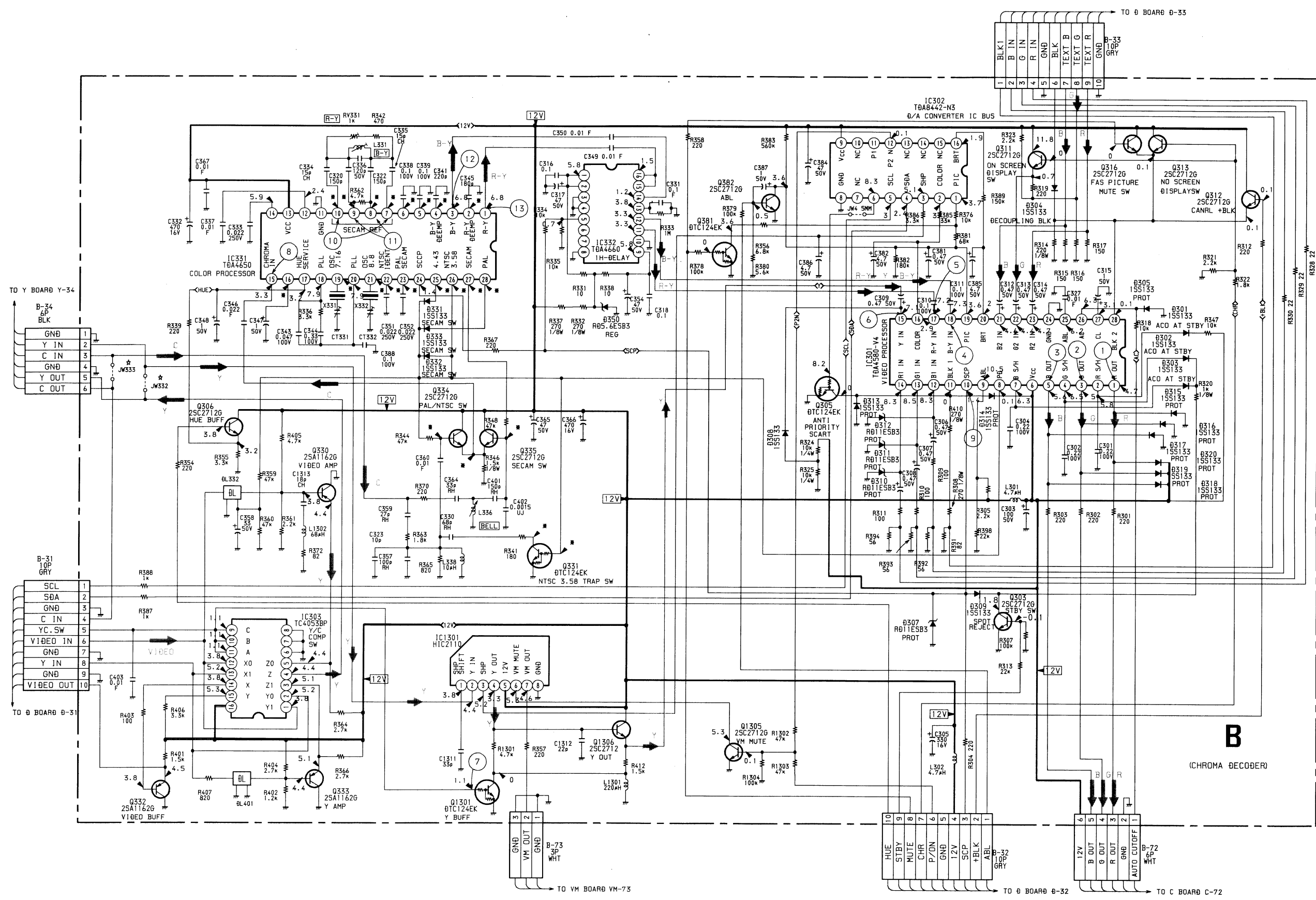
TRANSISTOR	
Q001	B-3
Q002	B-1
Q003	D-1
Q004	D-1
Q005	B-1
Q006	B-1
Q007	B-1
Q008	B-1
Q009	
Q251	E-4
Q261	C-4
Q271	B-6
Q502	F-5
Q505	D-6
Q506	C-6
Q507	G-5
Q601	A-6
Q602	C-10
Q603	B-6
Q604	B-7
Q605	C-5
Q606	B-5
Q607	B-5
Q608	B-5
Q609	B-5
Q598	G-1
Q801	G-4
Q804	E-10
Q805	F-7

VARIABLE RESISTOR	
RV501	E-5
RV502	G-6
RV601	A-9

TEST POINT	
TP91	G-9

C [R · G · B OUT]
-C Board-

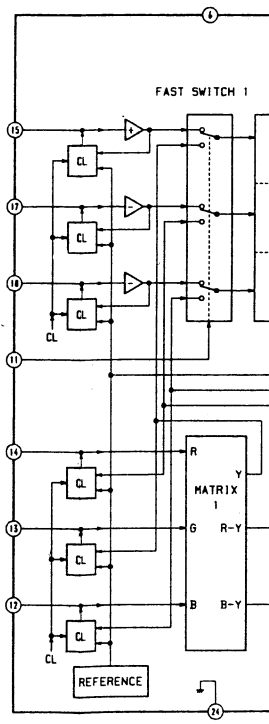


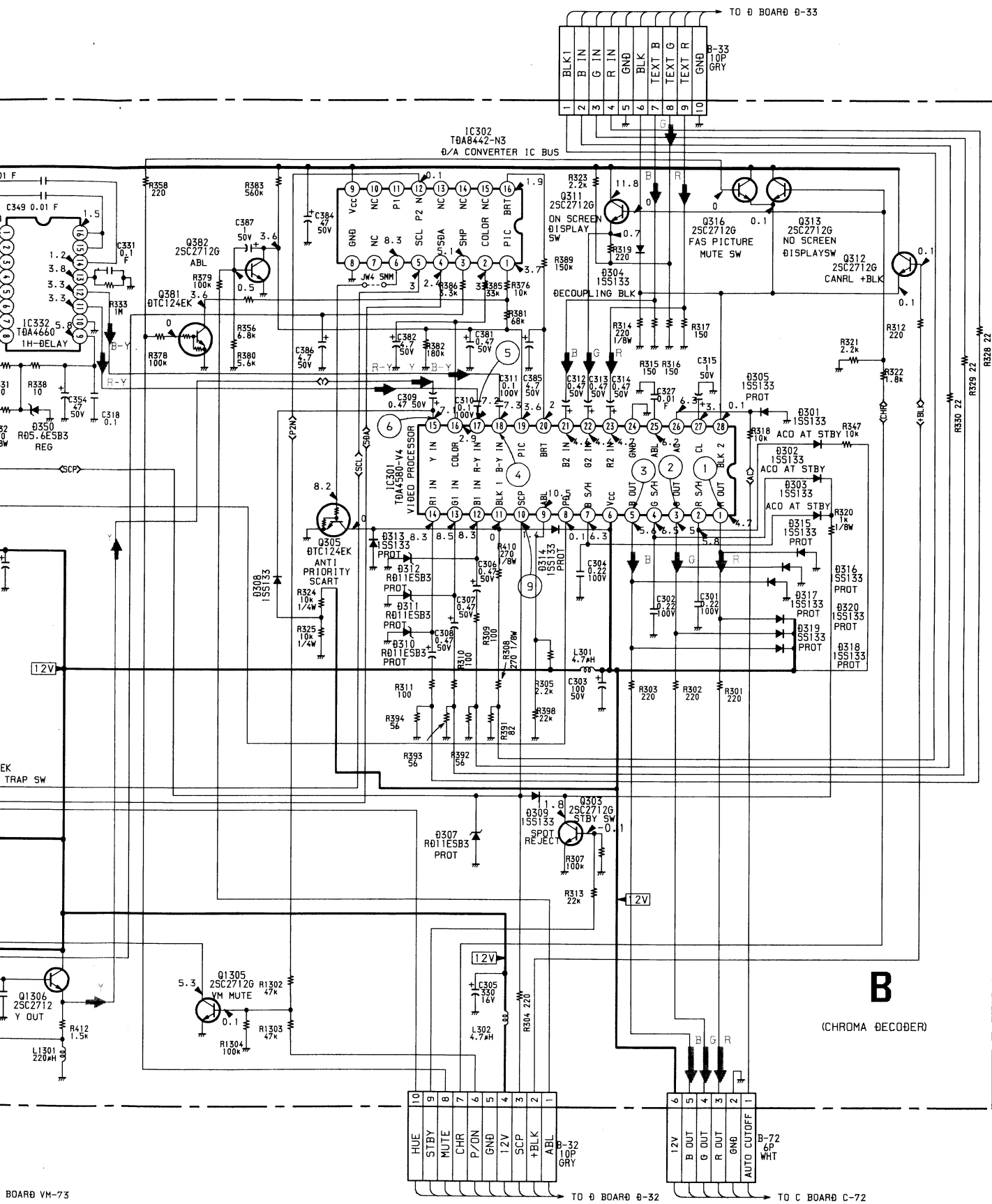


As is the voltage value shown by the mark the Schematic Diagram, see the another 11

	PAL	SECAM	NTSC3.58
IC331 (2)	7.5	7.3	7.5
IC331 (4)	7.5	7.2	7.5
IC331 (5)	10	10	10
IC331 (6)	10	10	10
IC331 (7)	4.9	3.4	4.9
IC331 (8)	3.7	3	3.8
IC331 (9)	3.7	3	3.8
IC331 (10)	5	3.4	4.9
Q331 (B)	0.1	0.1	0.1
Q331 (C)	0.5	0.5	0.5
Q334 (B)	4.9	0.1	4.9
Q334 (E)	4.3	4.6	4.3
Q335 (B)	0.1	5.3	0.1
Q335 (E)	4.3	4.6	4.3

B BOARD IC301 TDA4580

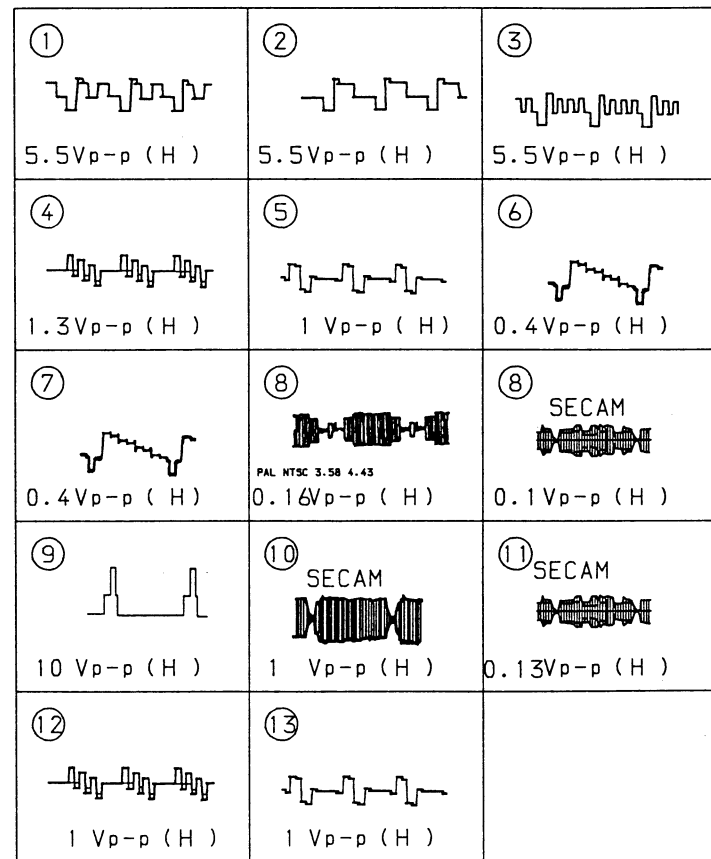




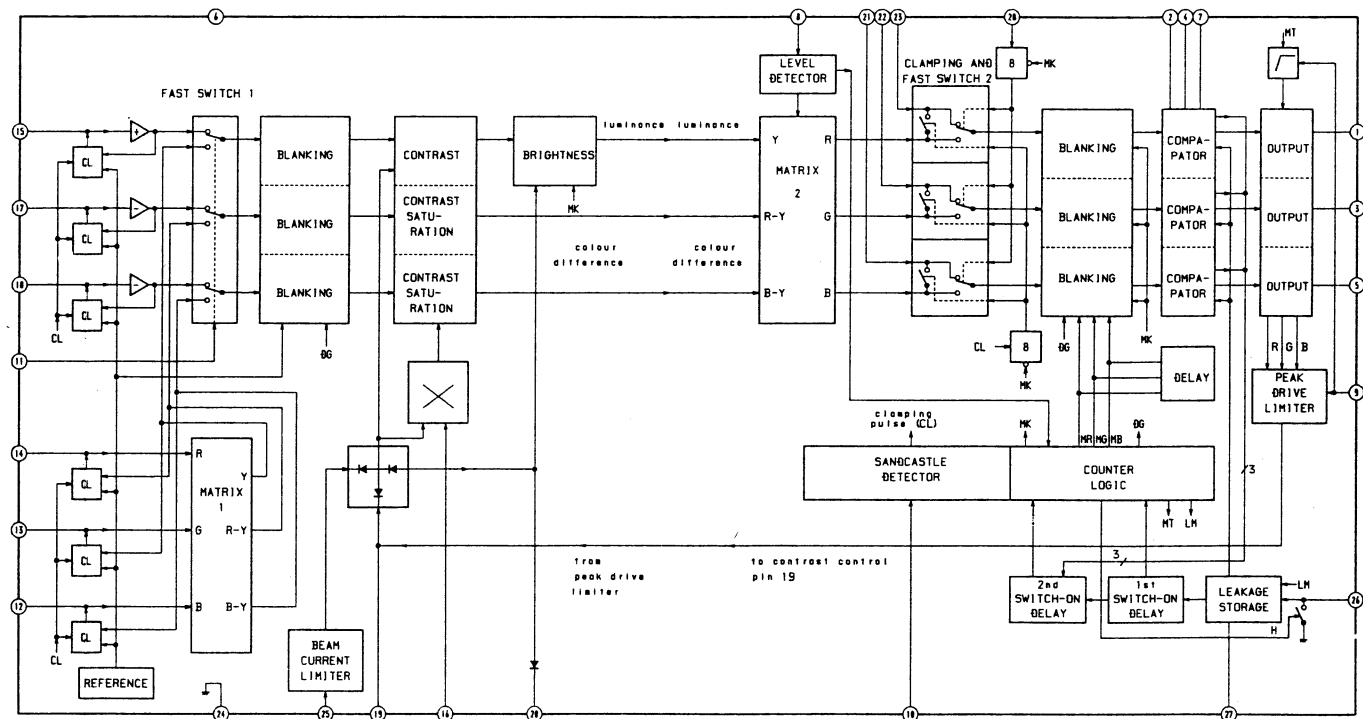
As to the voltage value shown by the mark ■ on the Schematic Diagram, see the another list.

IC331		As to the voltage value shown by the mark ■ on the Schematic Diagram, see the another list.			
		PAL	SECAM	NTSC3.58	NTSC4.43
IC331	2	7.5	7.3	7.5	7.4
	3	7.5	7.2	7.5	7.4
	4	10	10	10	9.8
	5	10	10	10	9.9
	6	4.9	3.4	4.9	4.9
	7	3.7	3	3.8	3.8
	8	3.7	3	3.8	3.8
	9	5	3.4	4.9	4.9
	10				
	11				
Q331	(B)	0.1	0.1	0.1	5.8
	(C)	0.5	0.5	0.5	0
	(E)	4.9	0.1	4.9	4.9
Q334	(B)	4.3	4.6	4.3	4.3
	(E)	0.1	5.3	0.1	0.1
Q335	(B)	4.3	4.6	4.3	4.3
	(E)				

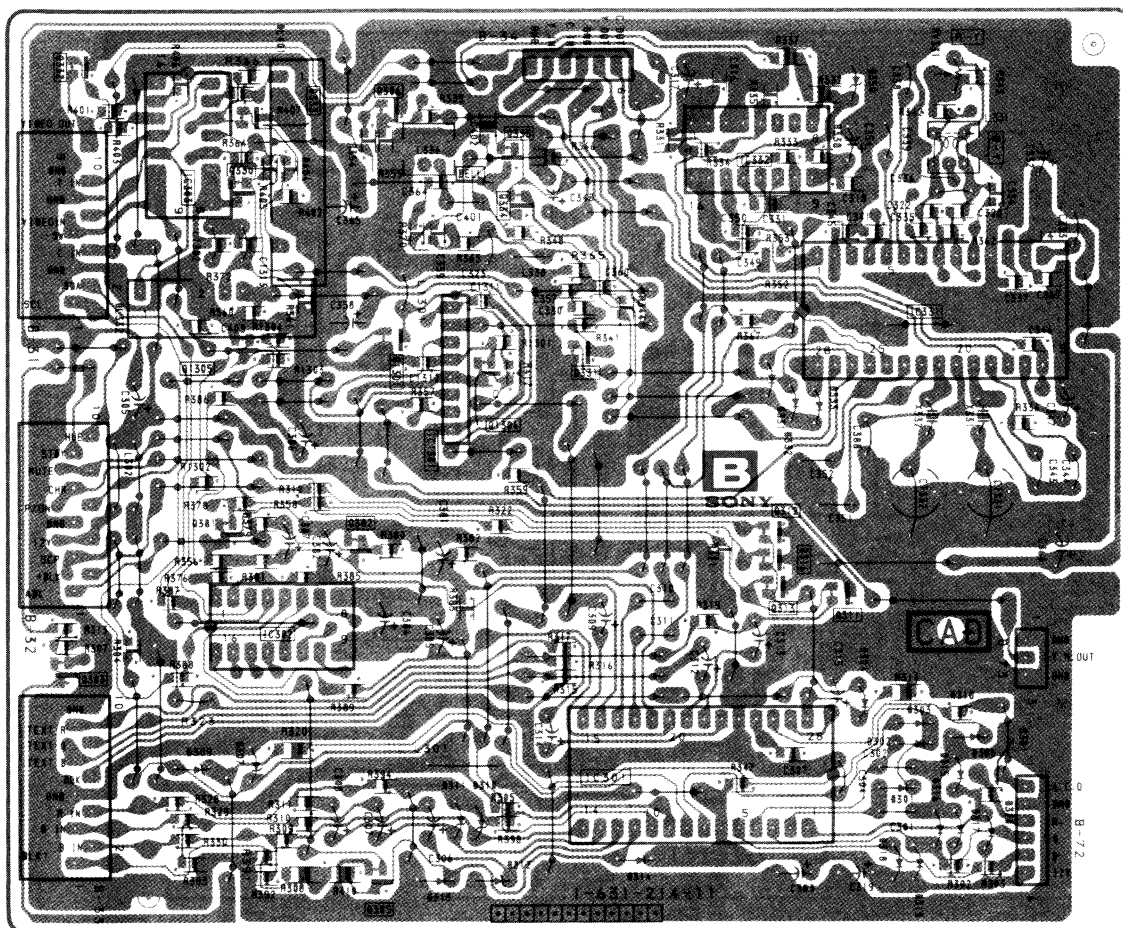
• WAVEFORMS B BOARD



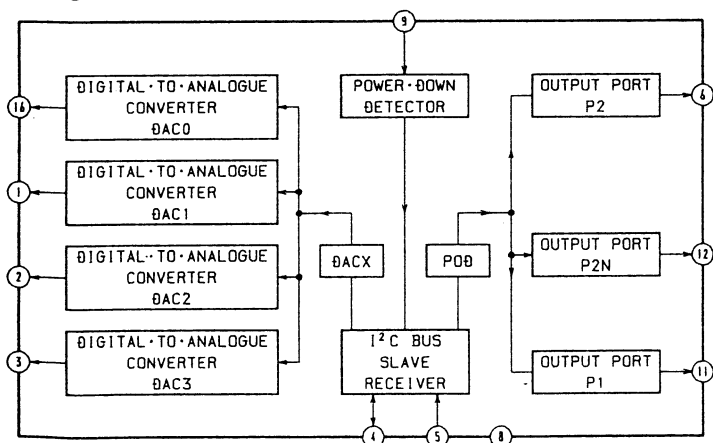
B BOARD IC301 TDA4580



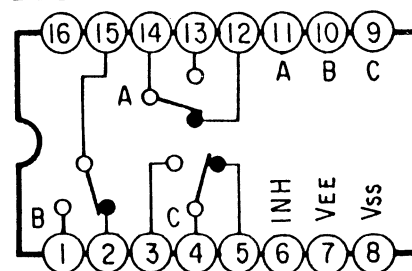
— B Board —



B BOARD IC302 TDA8442-N3

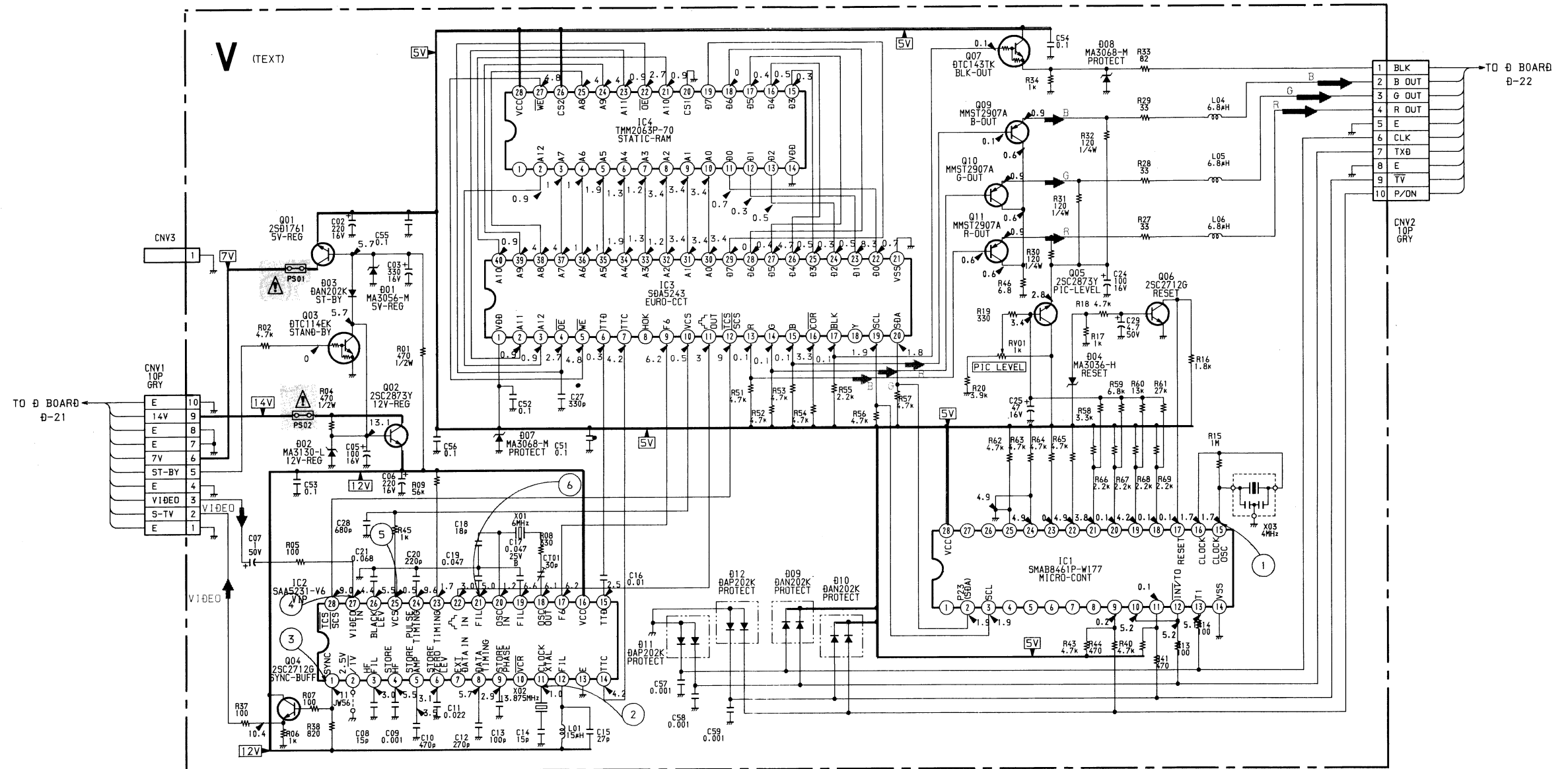


B BOARD IC303 TC4053BP

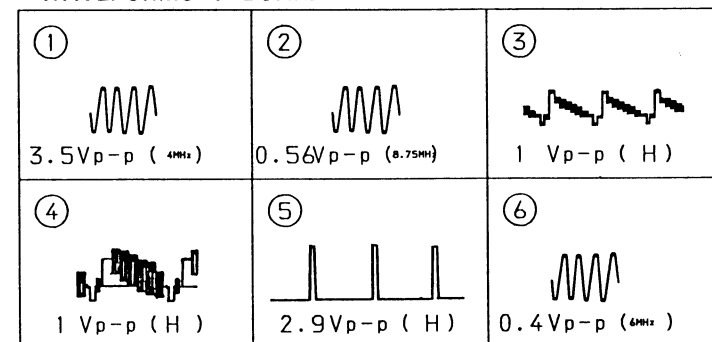


[TEXT]

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• WAVEFORMS V BOARD



5-4. SEMICONDUCTORS

BA4558
RC4558P
S0A2546
TEA2014
TEA2031A

TOP VIEW

BX1387

CXA1050A

TOP VIEW

CXA1114P
T0A4580
T0A4650
T0A6200
TEA2028B
2AA5231-V6
SMAB8461P-W177
TMM2063P-70

TOP VIEW

H014040BP
H014053BP
PCF8574P
TC4040BP
TC4053BP
T0A4660
T0A8442-N3
TEA2260

TOP VIEW

H014584BP
AP04584BC

TOP VIEW

HIC2110

MSF7805
RC7809FA
RC7812FA
PC24M05HF
PC7812H

S0A5243
SAB2083

TOP VIEW

T0A2500

T0A8170

0TA144ES
0TC114ES
2SA1162

LETTER SIDE

0TC124EK
MMST2907A
2SA1162G

JA101
JC501
2SA1091
2SA733
2S0789

2SB1185
2S01761

2S01913SA
2SB1274

2SB734
2S0774

2SC1761

2SC2611
2SC2688

LETTER SIDE

2SC2785

2SC2873Y
2S01623

2S01548-LB
2S01941

2S02096

CTU-125

MA152WK
0AN202K

0AP-202K

MA3036H
MA3056M
MA3068M
MA3130L
R03.6M-B2
R06.8M-B2
R013M-B1
R05.6M-B2

ERC06-15S
ERC25-06S
RU-3AM

ER029-08J

ES1F
GP080
RGP10G

KBU4JL-6088

L0-210VR
SEL-1222R-C

MA152WK
0AN202K

0AP-202K

MA3036H
MA3056M
MA3068M
MA3130L
R03.6M-B2
R06.8M-B2
R013M-B1
R05.6M-B2

MC931

R010ES-B3
R011ES-B3
R013ES-B2
R015ES-B1
R033ES-B1
R036ES-B4
R04.7ES-B2
R05.6ES-B2
R05.6ES-B3
R06.2ES-B2
R06.8ES-B3
R07.5ES-B3
R09.1ES-B2
R09.1ES-B3
1SS119
1SS133

U05G

SECTION 6 EXPLODED VIEWS

NOTE:

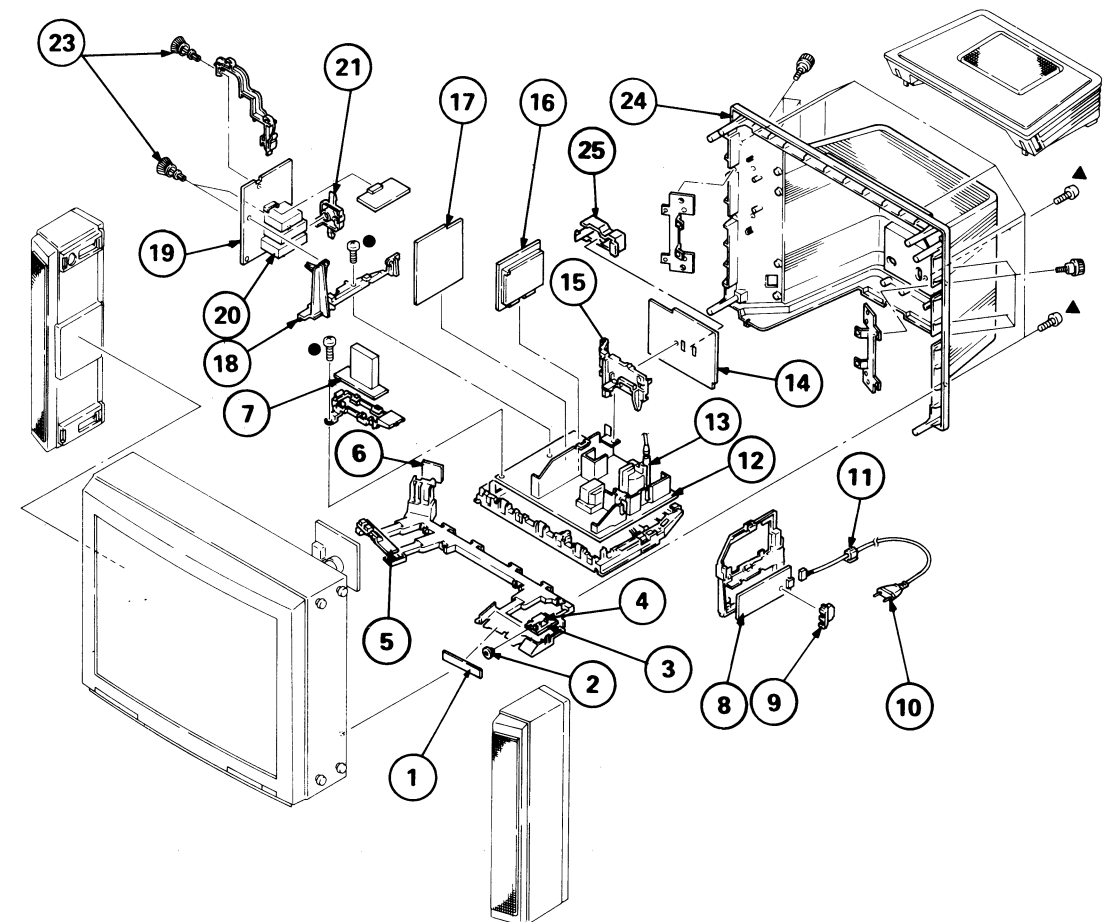
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

6-1. CHASSIS

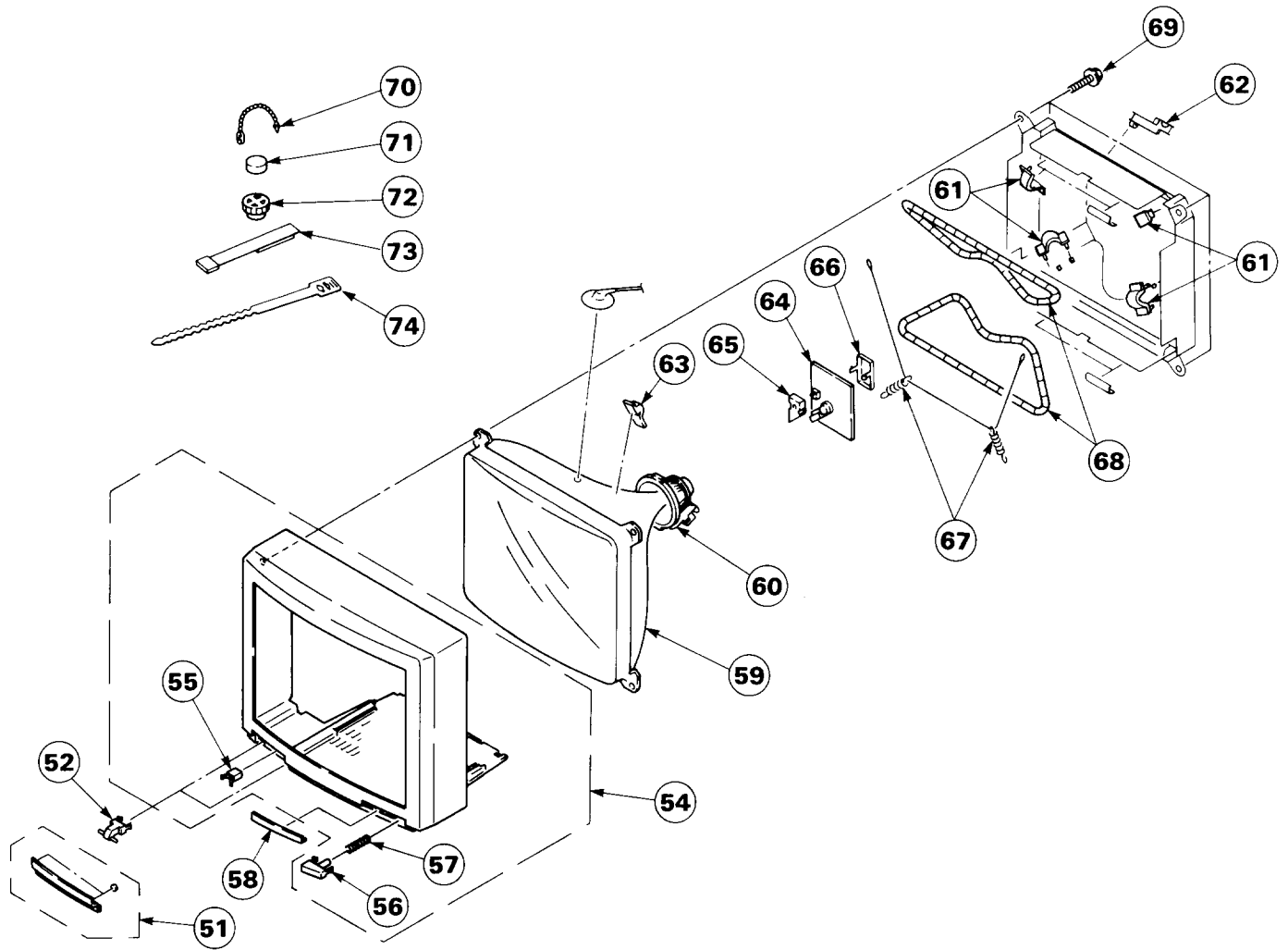
●: BVTP3 × 12 7-685-648-79

▲: BVTP4 × 16 7-685-663-79



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	*1-631-221-11	H2 BOARD		14	*A-1651-003-A	J1 BOARD, COMPLETE	
2	4-201-011-01	CAP, SWITCH		15	*4-386-624-11	BRACKET, J	
3	*1-631-223-11	F2 BOARD		16	*A-1347-031-A	V BOARD, COMPLETE	
4	▲1-571-433-11	SWITCH, PUSH (AC POWER)		17	*A-1621-001-A	B BOARD, COMPLETE	
5	*1-631-220-11	H1 BOARD		18	*4-386-629-12	BRACKET, A	
6	*1-631-222-11	J2 BOARD		19	*A-1632-001-A	A BOARD, COMPLETE	
7	*1-631-217-11	Y BOARD		20	▲1-465-301-11	TUNER, ET (UV-816 (PLL))	
8	*1-631-216-11	F1 BOARD		21	*4-386-617-01	HOLDER, TERMINAL	
9	*4-386-620-02	COVER, POWER		23	4-386-618-01	RIVET, T TYPE	
10	▲1-575-487-11	CORD, POWER (WITH NOISE FILTER)		24	4-201-017-01	COVER, REAR	
11	▲4-389-201-02	HOLDER, AC CORD		25	4-200-014-01	BRACKET, TERMINAL	
12	*A-1642-002-A	D BOARD, COMPLETE					
13	▲1-439-416-11	TRANSFORMER ASSY, FLYBACK (UX-1600)					

6-2. PICTURE TUBE



6-3. SPEAKER

- ; BVTP4×12 7-685-661-79
- ▲ ; BVTP4×16 7-685-663-79
- △ ; BVTP3×12 7-685-648-79

